About Our CONTRIBUTORS

E. ROLLIN STEALY, D.D.S. (State University of Iowa, 1907) concludes his suggestions for REBASING MAXILLARY DENTURES, begun last month, in this issue.

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LUCIAN CLIVE HOLTZENDORFF, JR. has his D.D.S. from Atlanta Southern Dental College (1934) and a B.B.A. from Emory University (1928). Every once in a while someone hits on a practicable idea that is at the same time so simple and so ingenious that the reader is almost ashamed not to have thought of it himself. Doctor Holtzendorff, a general practitioner, presents such an idea in RECORDING THE NATURAL VERTICAL DIMENSION.

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LA MAR WALDRON HARRIS, D.D.S. was graduated from the Chicago College of Dental Surgery in 1929. Doctor Harris is a general practitioner who has been occupying his spare time in experimenting with acrylic resins for use in dentistry, particularly for jacket crowns and simple inlays. He is now ready to report the results of his research and practical clinical observations, and next month this magazine will carry his article on THE USE OF ACRYLIC RESIN FOR JACKET RESTORATION.

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EDWARD REITER, D.M.D. (Tufts Dental College, 1922); M.S. (Northwestern University, 1926) has previously contributed to the dental literature, especially on the subject of pain and anesthesia. Doctor Reiter specializes in major and minor oral surgery.

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Rebasing Maxillary Dentures

(Concluding Installment)

E. ROLLIN STEALY, D.D.S., Shenandoah, Iowa

Lowering the Bite

Before the maxillary denture is removed from the patient's mouth, the distance that the bite is to be lowered should be determined by facial measurements, such as by measuring the distance from the angle of the eye to the angle of the mouth, and from the base of the nose to the base of the chin. If it is found advisable to close the mouth 4 mm., for example, draw a line, b, 4 mm. above the line, a, in Fig. 26, shown in the first installment to this article, last month. If the bite is to be raised 4 mm. instead of lowered, draw a line, c, 4 mm. below the line, a (Fig. 26). If the forehead is too wrinkled, make the records, a and b, or c, upon the nose (Fig. 27, First Installment). When these measurements have been determined, the maxillary denture is removed from the patient's mouth and set aside.

Taking the Bite

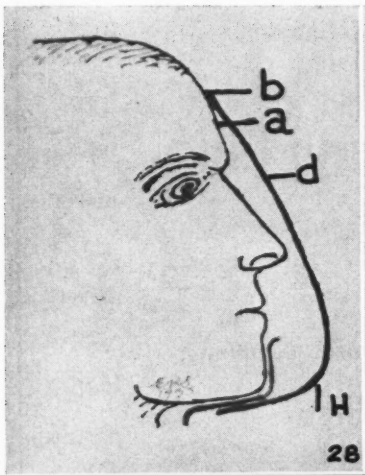
Soften the occlusal surface of the bite-rim of the bite-block, previously made, with dry heat or a hot instrument; then place it in the patient's mouth.

Technique for Lowering Bite

Place the face-o-meter (Fig. 28, H) upon the patient's face with the flattened upper end contacting the forehead. Instruct the patient to place the tip of the tongue in the notched palatine border of the bite-block, then to close slowly under pressure, and continue to close until the upper end of the face-o-meter rests upon the line, b shown in Fig. 28. Have the patient hold this position until the bite-rim has been chilled. Before taking the bite, if the operator finds it advisable, he may place a thin strip of carding wax on the occlusal surface of the bite-rim, heating it a little with a hot instrument.

Technique for Raising Bite

If the bite is to be raised 4 mm. instead of lowered, have the patient cease closing the mouth in centric oc-



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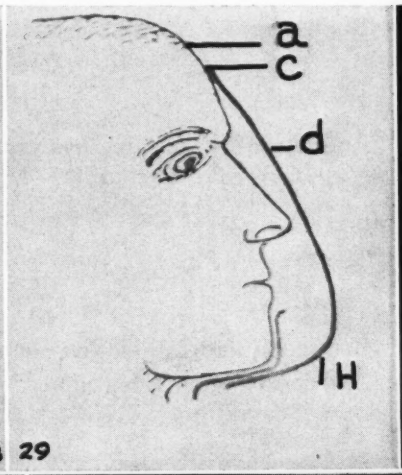

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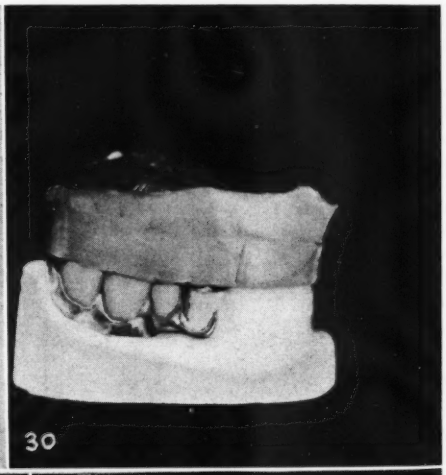

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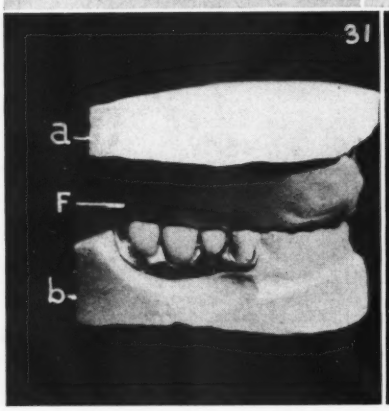

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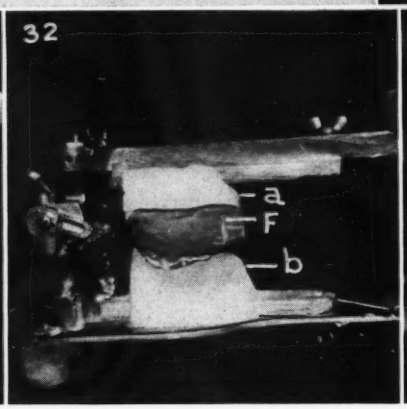

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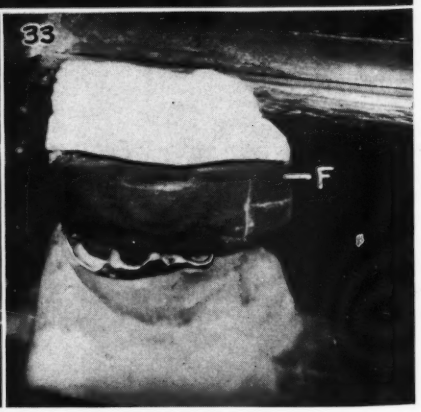

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Fig. 28—Face-o-meter, H, in position with upper end of arm, d, contacting face at b, with bite-block in position in patient's mouth; bite has been lowered the distance between lines a and b.
Fig. 29—Position of upper end of arm, d, contacting face at c, when bite has been raised the distance between the lines a and c; bite-block in position.
Fig. 30—Maxillary bite-block upon the mandibular cast.
Fig. 31—Maxillary cast, a; bite-block, F; mandibular cast, b.
Fig. 32—Casts a and b with bite-block, F, in position, mounted upon the articulator.
Fig. 33—Enlarged view of casts a and b with bite-block, F, in position of Fig. 32.

clusion (with the tip of the tongue contacting the notch on the palatine border of the bite-block) when the upper end of the face-o-meter rests upon the line, c, shown in Fig. 29.

Check for centric occlusion by having the patient open and close the mouth several times with the tip of the tongue contacting the notched palatine border of the bite-block, under pressure. If the operator prefers, in addition to this, he may direct the patient to contact the lips several times, while closing in centric occlusion.

Recheck the facial measurements, and the front and profile expression. If the patient has a mandibular denture, for which a rebasing is to be done later, allowance must be made for this with the facial measurements while taking the bite.

If the centric occlusion, the facial measurements, the profile, and the expression are satisfactory, remove the maxillary bite-block as well as the partial lower restoration, and place them upon the mandibular cast (Fig. 30).

Before removing the bite-block from the patient's mouth, it is usually advisable to mark the median line and other records for future reference.

Mounting the Casts

Articulate the casts with the bite-block in position (Fig. 31); then mount them upon the articulator (Fig. 32). (A face-bow is of little value except when new teeth are to be substituted for the old.) Before removing the bite-block, see that the guide-pin, the adjustable plate upon which it rests, and other movable or adjustable parts are securely locked.

The patient may now be dismissed with instructions to return for a try-in. The patient should not take the partial lower restoration with him.

Trimming the Maxillary Denture

After the casts with the maxillary bite-block have been satisfactorily mounted upon the articulator (Fig. 32), remove the palatine border and the buccal and labial areas of the maxillary denture, permitting sufficient material to remain to retain the teeth in position.

Technique—1. With a number 10 large round bur drill holes 5 mm. or 6 mm. apart along the palatal, the buccal, and the labial borders of the denture adjacent to the teeth (Fig. 34). Enlarge these holes with a larger round or tapering vulcanite or bone drill, using an instrument that is sufficiently large to remove all the material between the original holes drilled.

2. After the palatine, the buccal, and the labial sections of the denture have been removed, cut away, with fissure burs and carborundum disks, as much of the material as advisable between the teeth; also remove with a medium grit arbor band, the excess material on the anatomic surface of the denture, permitting only enough to remain for retention purposes (Fig. 35).

3. Remove the bite-block from the articulated casts. Place the occlusal matrix upon the mandibular cast with the trimmed denture in position (Fig. 36).

4. If the maxillary cast contacts the trimmed denture when lowering the arm of the articulator, remove the denture and trim as indicated. Repeat this procedure until there is a clearance of at least 2 mm. between the maxillary cast and the denture.

Correcting the Bite

In correcting the bite by changing the vertical dimensions between the jaws, occasionally it is advisable to replace the original posterior teeth with shorter or longer teeth of the same mold. With a fissure bur or a thin disk, sever the narrow bands of denture material connecting the posterior teeth with the anterior. Place the substitute in their respective positions in the occlusal matrix positioned upon the mandibular cast.

If longer or shorter anterior teeth are indicated, sever the connecting bands between the teeth; select others of the same mold, suitable in length; then place them in the occlusal matrix.

If defective teeth, or other unforeseen conditions prevail, discard the old denture, and substitute new teeth of the same mold and of the required size. Provision was made for such a substitution when the occlusal matrix was made, by permitting the labial and buccal surfaces to extend high upon the teeth.

Tacking Trimmed Denture to Foil Matrix

1. After the denture has been trimmed so as not to contact the maxillary cast, replace the waxed foil matrix upon the cast, tacking its projecting part with sticky wax to the art portion.

2. Tack the trimmed denture, or the teeth substituted, to the foil matrix with sticky wax. This is positioned in the occlusal matrix upon the cast (Fig. 36).

3. Remove the occlusal matrix (Fig. 37, D); then check for occlusion (Fig. 38). Make such corrections as are indicated to secure proper articulation and a balanced occlusion. (If the patient has his natural mandibular teeth, in some instances it is impossible to secure a balanced occlusion.)

4. After the occlusal matrix has been removed the required teeth (wider or narrower, longer or shorter, posterior or anterior, or posterior and anterior) may be substituted, placed in occlusion, and waxed to the foil matrix.

Waxing Trimmed Denture or Substituted Teeth to Foil Matrix

1. Finish waxing the trimmed denture or the teeth substituted to the foil matrix (Fig. 39), flowing as little wax as possible over the foil upon the art section of the cast. The foil makes it easier later to remove the waxed case from the cast.

2. After the labial and buccal surfaces are waxed (Fig. 39), finish waxing the palatal surface before removing the case from the cast for a try-in.

3. Remove the finished case from the cast; cut off the projecting foil with a pair of shears (Fig. 40).

4. Remove the case from the cast; smooth the peripheral border; then place it in the patient's mouth and check for centric and balanced occlusion.

The case is now ready for the laboratory.

Raising the Bite

Maxillary dentures in which raising of the bite is indicated will now be briefly considered. It is assumed that the cast secured from the denture or from the denture-impression in which the suctionless denture was used as a tray is satisfactory.

The technique for raising the bite is the same as that for lowering the bite with an exception or two. The bite-rim must be higher. After having recorded on the forehead or nose the distance that the bite is to be raised, the face-o-meter is placed upon the patient's face. The patient is instructed to close in centric occlu-

sion with the bite-block in position until the arm of the device rests upon the line, c, shown in Fig. 29. After the vertical relationship between the jaws is established and the bite secured, the remaining technique is the same as that for lowering the bite.

Faulty Articulation

Maxillary dentures in which the articulation is faulty require rebasing irrespective of the condition of the suction. A suctionless denture with an incorrect vertical dimension complicates the case, especially when the patient is dissatisfied with either or both. In these cases the teeth have invariably been articulated correctly with a noncentric occlusion prevailing; when the finished denture is placed in the patient's mouth and the patient closes correctly in centric occlusion, a lateral or a protrusive shifting of the mandible will be evident. If the bite has been taken with the mandible shifting laterally, the median line will be off-center when the denture is in his mouth, and the patient closes in correct centric occlusion. If only protrusive shifting has occurred, the median line will not be off-center when closing in centric occlusion, except when complications arise involving both mandibular shiftings. (The most pronounced shiftings, are likely to occur in aged people whose mandibular excursions have been altered through condyle resorption. These patients seldom if ever have all their mandibular teeth and there is usually excessive closing of the bite.)

Cases will now be considered in which a faulty articulation occurs as a result of a lateral or protrusive shifting of the mandible during the registration of the bite in an attempted centric occlusion while closing the mouth.

Technique

1. Maxillary and mandibular casts are made.

2. A foil matrix is made for the maxillary cast.

3. An occlusal wax bite plate is made, but it is not sealed to the maxillary denture at this time.

4. An occlusal bite-block is now made. After having determined the distance that the bite is to be raised or lowered the technique already described for raising or lowering the bite is used. After the bite is satisfactorily taken, place the bite-block aside.

5. Make an eccentric, or noncentric, occlusal matrix; the wax occlusal

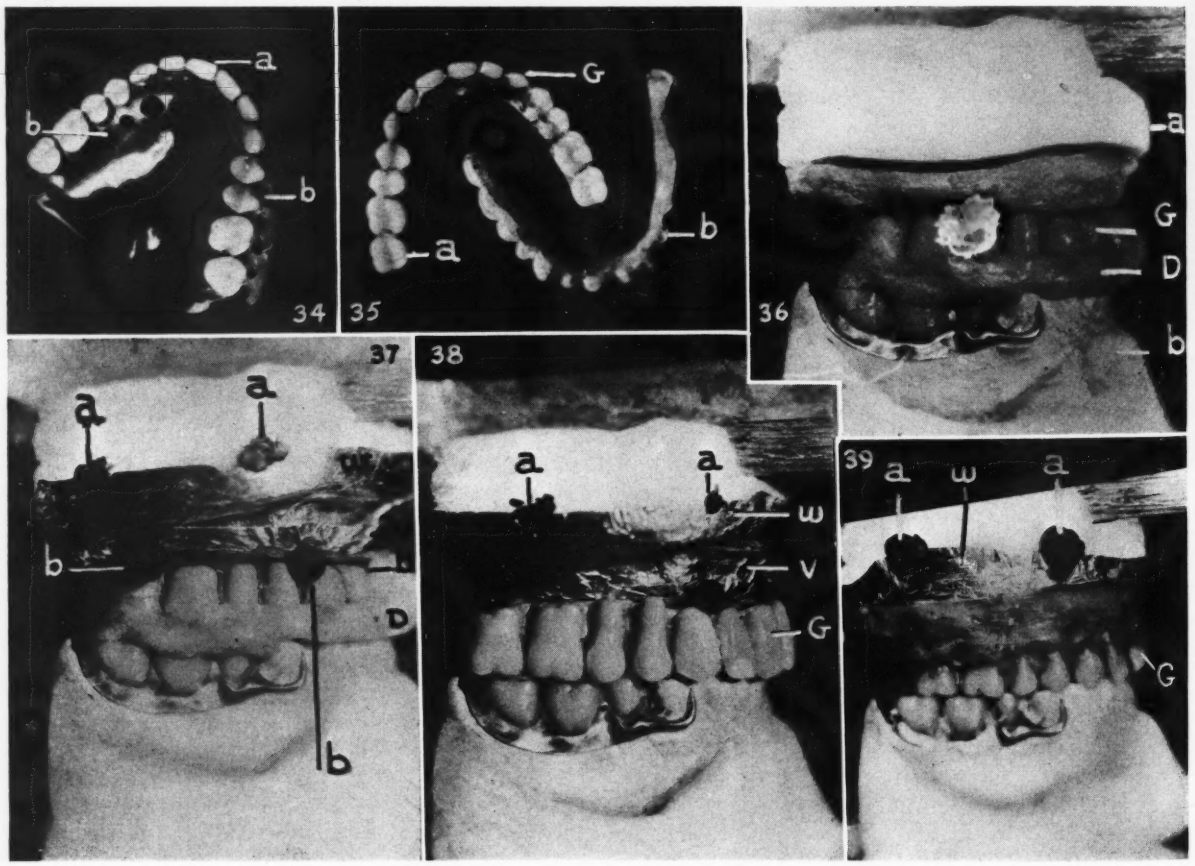

Fig. 34—Maxillary denture, a, with holes b drilled in its palatine surface and buccal and labial surfaces adjacent to teeth.

Fig. 35—G, Maxillary denture with its palatal, buccal, and labial surfaces removed; a, occlusal view of trimmed denture; b, palatine view of denture.

Fig. 36—Enlarged sectional view of articulated casts, a and b, mounted on articulator. Occlusal matrix, D, upon the mandibular cast, with the trimmed maxillary denture, G, in position.

Fig. 37—Occlusal matrix, D, in position; trimmed denture in position; foil matrix, v, upon the maxillary cast; foil, w, tacked to art section of cast at a; also denture v at b, or teeth substituted to the foil.

Fig. 38—Occlusal matrix removed: denture, G, or substituted teeth tacked to foil matrix, v, with projecting foil, w, tacked to art section of the cast at a.

Fig. 39—Same as Fig. 38 with denture, G, or teeth substituted waxed to foil; projecting foil, w, tacked to art section of cast at a.

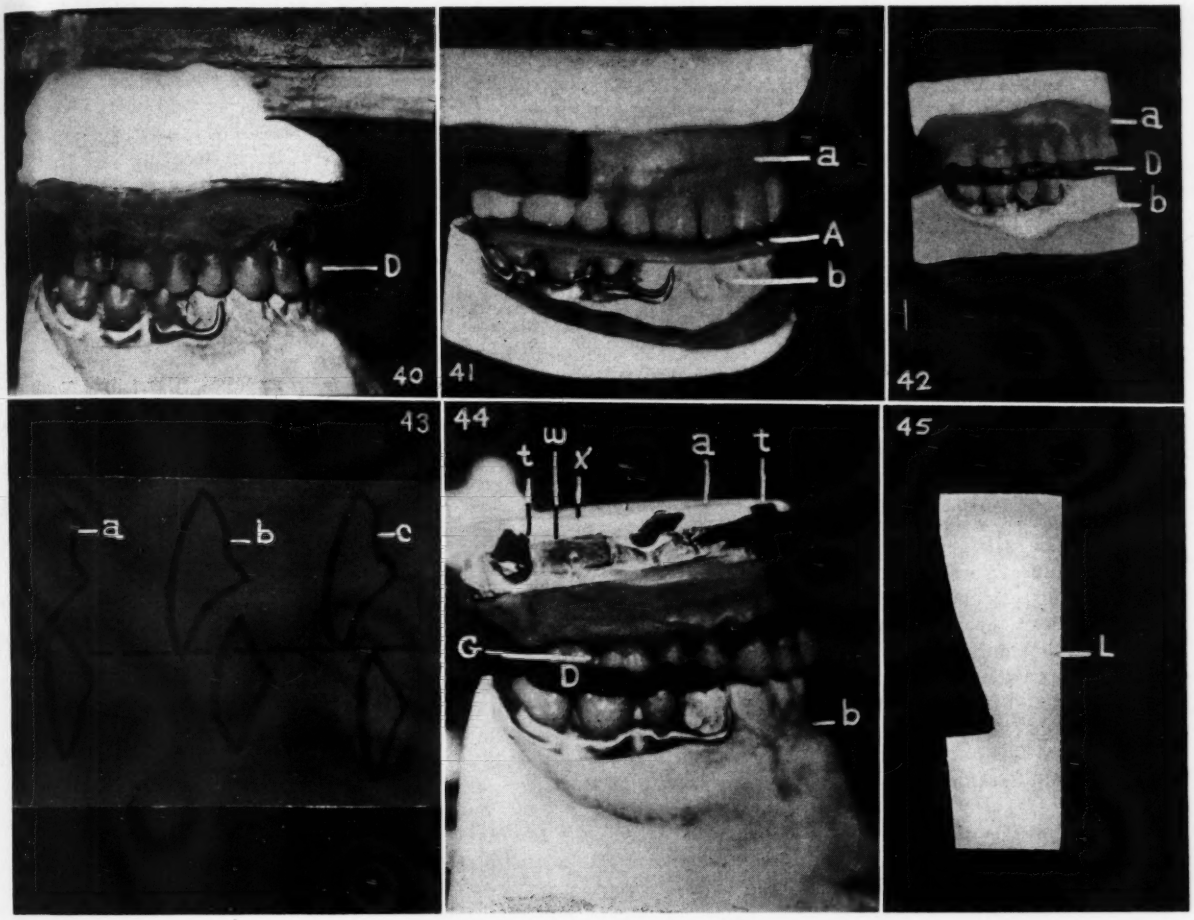

Fig. 40—D, Trimmed denture waxed to foil. Foil resting upon art section has been removed.

Fig. 41—Mandibular cast, b, with an occlusal wax plate, A, resting upon its occlusal plane; maxillary denture, a, is so positioned upon the occlusal wax plate, A, that when pressure is brought upon denture, it will be pressed down, and teeth will be in correct articulation.

Fig. 42—Teeth in correct occlusion, with protruding flange adapted to labial and buccal surfaces of teeth: D, occlusal matrix; a and b, casts.

Fig. 43—Overbite, a; overjet, b; overbite without an overjet, c.

Fig. 44—Maxillary and mandibular casts, a and b, mounted upon articulator; an occlusal matrix, D, in position, the anterior portion of D being removed; the posterior teeth of the old denture, or teeth substituted, in position in the occlusal matrix, D, anterior teeth of old denture being discarded and narrower teeth being substituted. All teeth are waxed to foil. Projecting flange of foil matrix, w, is tacked at t, to art section, x, of cast.

Fig. 45—Narrow sheet of cardboard, L, notched roughly so as to resemble profile of face.

plate, previously made, may now be used.

Eccentric or Noncentric Occlusal Matrix

An eccentric or noncentric occlusal matrix is one in which the teeth articulate properly with the mouth closed in a noncentric relationship. To secure such a matrix, have the patient close the mouth a number of times in a noncentric occlusion, with the teeth in proper articulation as they were originally set to articulate.

Technique 1—After the patient is able to close the mouth in a noncentric occlusion with the teeth articulating correctly, place the denture with the occlusal wax plate attached to it in the patient's mouth, with instructions to close as directed and to hold in that position. Before the final adaptation of the wax to the buccal and labial surface of the maxillary and mandibular teeth, check for correct closure. If the teeth articulate correctly with the jaws in this noncentric relationship, finish adapting the wax; chill and remove the denture from the mouth and the noncentric or eccentric occlusal matrix from the denture; then set aside for future use.

If the patient becomes confused while trying to close in a noncentric position, so that the teeth will be in correct occlusion, use technique 2.

Technique 2—If it is impossible to get a satisfactory eccentric occlusal matrix with the teeth in correct occlusion while closing incorrectly, place the maxillary denture, having the occlusal wax plate attached and a projecting flange, upon the mandibular cast (Fig. 41). Check for correct occlusion; then force the denture to position under hand pressure. Finish adapting the wax to the exposed surfaces of the teeth, permitting it to extend high gingivally on the maxillary teeth (Fig. 42).

After a satisfactory eccentric, or noncentric, occlusal matrix has been secured by one of the methods outlined, and a satisfactory bite-block with a proper vertical dimension is had, the technique for finishing the case is the same as that for raising, or lowering the bite, with this exception: the eccentric occlusal matrix is substituted for the centric occlusal matrix. If technique 2 is used, the oc-

clusal matrix thus formed will be used instead of the eccentric used in technique 1.

Overbite; Overjet; Noncentric Median Line

In addition to faulty articulation resulting from a lateral or protrusive mandibular shifting during an attempted closure in centric occlusion while taking the bite, faulty occlusion may also be due to an excessive overbite, overjet, or a combination of both, or to the median line of the denture being off-center, with a correct centric occlusion prevailing. These cases may be complicated by a lateral or protrusive shifting, or by incorrect vertical dimensions.

Overbite—If an excessive overbite (Fig. 43) is present, the vertical dimension may be satisfactory. If so, the technique ordinarily used will be sufficient without rebasing. If, in resetting the anterior teeth higher, however, so as to secure a satisfactory overbite with a balanced bite, the incisal edges are found to be too high, it may be necessary to open the bite, so that the incisal edges of the teeth will be visible and in harmony with the lip line.

After the various steps given for raising the bite are followed and an occlusal matrix is made and mounted upon the mandibular cast, remove the teeth from the denture; set the posterior teeth in the occlusal matrix; then wax to the foil matrix; cut away the anterior portion of the occlusal matrix and wax the teeth to the foil matrix (Fig. 44) with the proper overbite. When the case has been waxed and a satisfactory try-in made, it is ready for the laboratory.

Overjet—1. If an excessive overjet (Fig. 43) prevails owing to some error while having the patient close in centric occlusion, the technique for correction is the same as that of protrusive mandibular shifting.

2. If centric occlusion was correct while taking the bite but an overjet occurs, the case may at times be corrected by mounting the casts upon the articulator to reset the anterior teeth farther back, teeth of a narrower mold being used.

If an overjet occurs with an undue raising, or lowering of the bite, the technique for raising the bite should be followed for securing a correct vertical dimension. Substitution of the anterior teeth or of all the teeth may be necessary.

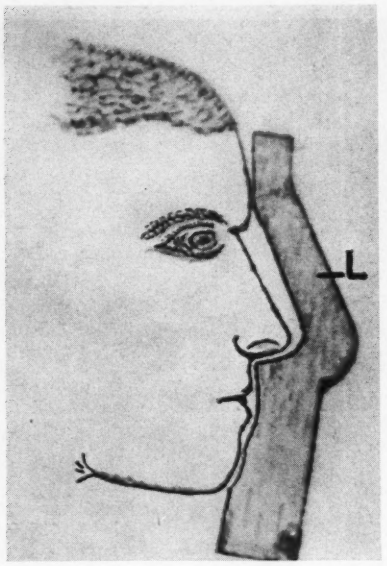

Fig. 46—Side view of profile device, L, properly trimmed and centered upon median line of face.

Off-Center—If the median line is off-center, owing to lateral or protrusive mandibular shifting while taking the original bite, and if the vertical dimension is incorrect—then an eccentric occlusal matrix may be made and placed upon the mandibular cast. Inasmuch as the posterior teeth were originally set in correct articulation with the mandibular posteriors, it is evident that the anterior teeth originally used were too wide; hence, an overjet occurs when the mandible in its excursions returns to its proper position in centric occlusion. The most satisfactory way to correct such a case is to remove the teeth from the old denture, or to select new teeth of the same posterior mold, but with narrow anteriors. Position the posterior teeth in the eccentric matrix, upon the mandibular cast; cut away the anterior section of the matrix; then wax teeth of a suitable mold and shade to the foil matrix.

Finish waxing the cast; then try in the patient's mouth, paying particular attention to centric occlusion, proper articulation, overbite, overjet, and the median line.

With some patients it is difficult correctly to locate the median line, then place the teeth in proper relationship to the median line. This is especially true when the plane of the lips with the mouth closed is not parallel with the pupils of the eyes. In these cases when the mouth is opened and closed during conversation, the angle of the mouth is higher on one side than on the other. In originally setting up the anterior teeth in cases similar to this, the median line of the finished case as well as the vertical axis of the teeth are not correct.

To assist in locating the median line, and in setting the centrals in proper relationship to the line, a simple device may be made. Take a strip of heavy cardboard 2 inches in width by 6 or 8 inches long. Notch one side, as illustrated in Fig. 44; then position the notched cardboard upon the patient's face (Fig. 45); enlarge the notch and make other corrections in fitting until, as a final result, the edge of the cardboard roughly fits the profile of the face. After this has been done, locate the median line of the forehead and of the chin; then place a vertical line or dot at each place. Place the cardboard on the face, with its edges resting on the points marked; then stand in front of the patient and note the position of the teeth as set in the wax denture as well as the position of the median line and the lip line. If the median line of the setup is directly beneath the edge of the cardboard, and the position of the teeth harmonizes with the median line, the case when rebased will be satisfactory.

Laboratory Technique

1. If a vulcanite denture is to be rebased with rubber, after the case has been flasked and the wax removed, roughen the remaining vulcanite of the trimmed denture with a large inverted cone bur. Pack the process in the usual way.

2. If a thermoplastic denture is to be rebased, remove the remaining material in the usual way, after the case has been flasked; then finish processing in any preferred technique.

3. In rebasing a denture composed of other materials than those mentioned, in which the material must be completely removed, after the case is flasked and the wax removed, sever the narrow bands connecting the individual teeth with a fissure bur; remove the teeth; remove the remaining denture material from the teeth; replace the teeth in the flask, cementing them to place with a transparent cement, preferably one recommended by the manufacturers of the denture material to be used. Before replacing the teeth, it is best to clean and polish the teeth and to clean the flask.

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Recording the Natural Vertical Dimension

L. C. HOLTZENDORFF, JR., D.D.S., Valdosta, Georgia

IN THE REPLACEMENT of the natural teeth with artificial dentures, it is essential that the correct vertical dimension of the natural dentures be recorded before the teeth are removed. This article describes an accurate easy method of making a cardboard profile template which serves as a record of the vertical dimension.

The equipment needed includes a small sheet of stiff white cardboard, a pencil, scissors, and a number 2 photoflood bulb with an extension cord.

Technique

1. The photoflood bulb (without a reflector) is turned on and set up at a distance of at least 18 or 20 feet from the patient. The patient is directed to stand in a door corner or corner of a filing cabinet (Figs. 1 and 2), so that the patient's head is at right angles to the light rays and a shadow of the patient's profile is cast on the flat surface against which he is standing. Care should be taken that this flat surface against which the outline of the profile is drawn is also at right angles to the source of light. The patient's teeth should be closed in centric relation. For the sake of accuracy, the patient's profile should be not more than 1 inch away from the cardboard which is placed behind it on the wall, so that a shadow of the patient's profile is cast upon it.

2. The patient is cautioned to be as motionless as possible while a pencil is used to trace on the cardboard the edge of the shadow of the profile from the bridge of the nose down to the bottom of the chin (Fig. 3).

3. The cardboard is cut out along this line (Fig. 4) and checked by fitting back to the patient's face (Fig. 5).

4. With the scissors two parallel cuts are made, one under the nose and the other above the chin. The tab of cardboard between these cuts is bent back double (Fig. 6). This is done to free the lips for the next step.

5. An anterior incisal marker about 2 inches long and pointed at one end is cut from the side of the cardboard template and is then held on the template with the thumb while the template is adjusted back to the patient's face. The patient is asked to part the lips enough to show the anterior teeth. This allows the cardboard incisal marker to be adjusted so that its point coincides with the incisal edge of the upper anterior teeth at the median line (Fig. 7).

6. The template and incisal marker are removed together from the patient's face, and the position of the incisal marker on the template is recorded by tracing around the end of the incisal marker with a pencil (Fig. 8).

7. The two parts are clipped to-

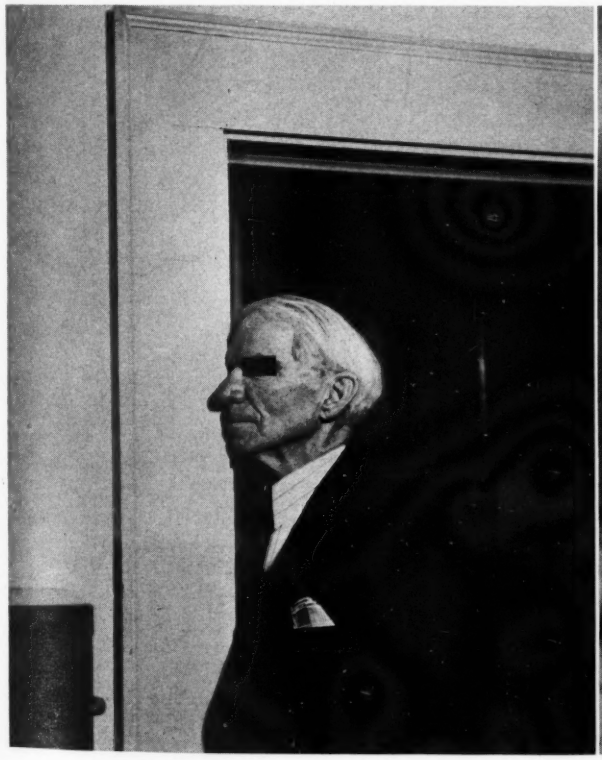


Fig. 1—Position of patient at door facing.

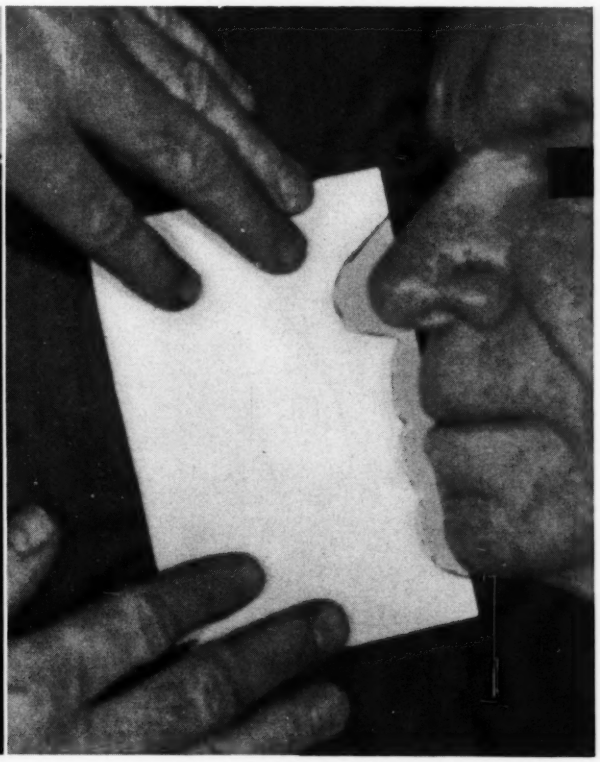


Fig. 2—Patient's face with shadow of profile on cardboard held against wall.

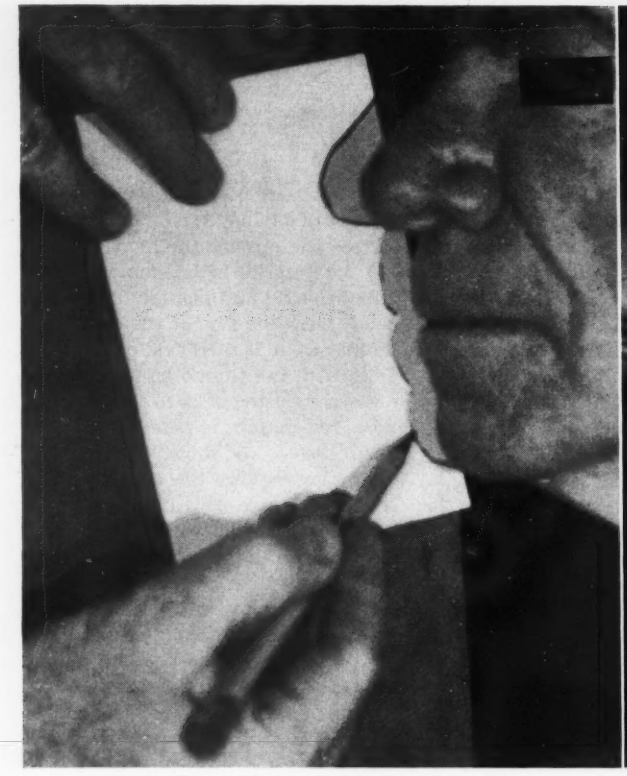


Fig. 3—Tracing outline of shadow with pencil.

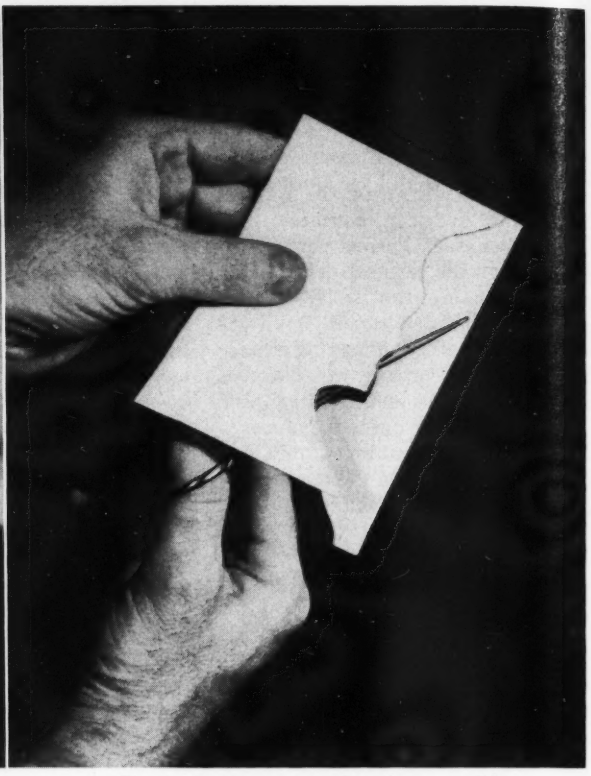


Fig. 4—Cutting out template along traced line.

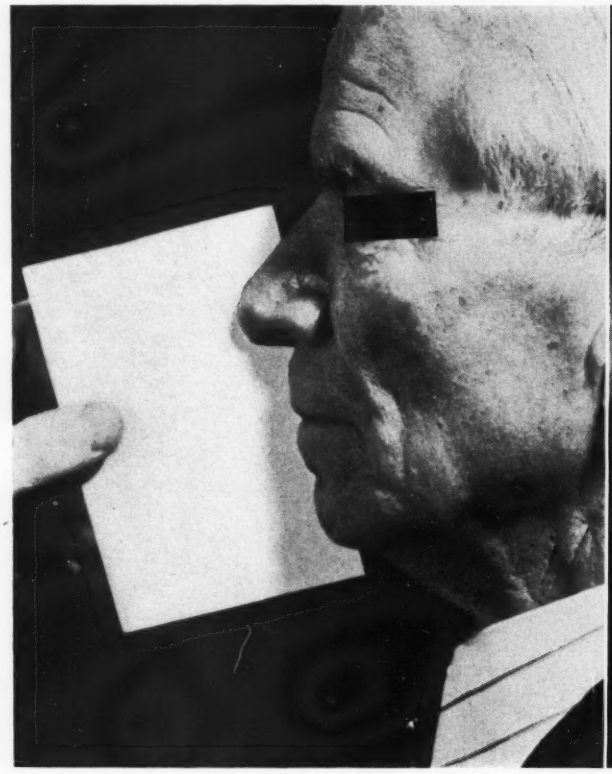


Fig. 5—Fitting template back to face.

Fig. 6—Cardboard folded back in proximity of lips so that incisal marker can be used.

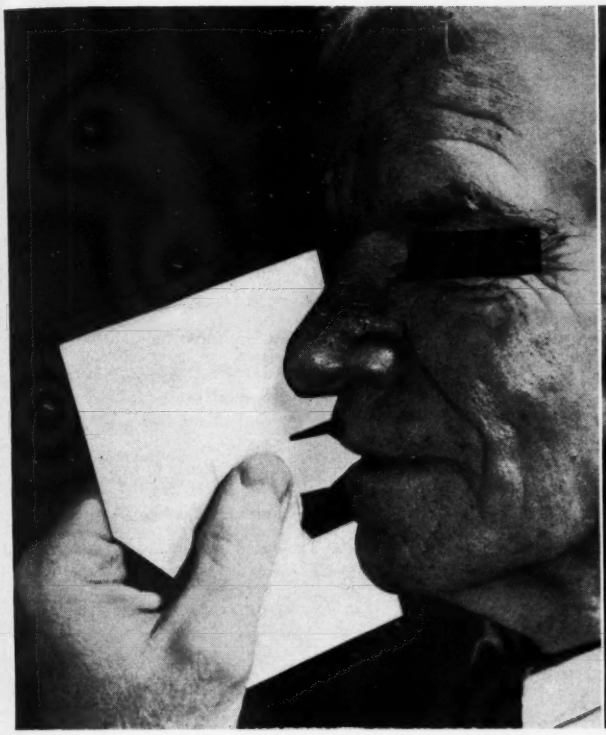


Fig. 7—Adjusting incisal marker to anterior teeth.

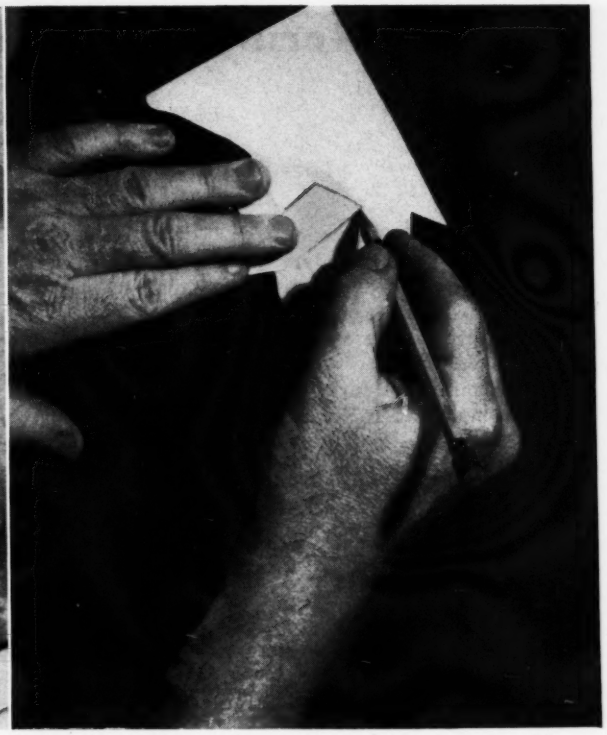


Fig. 8—Record of incisal marker is made by tracing its outline on template.

Fig. 9—Finished template and incisal marker.

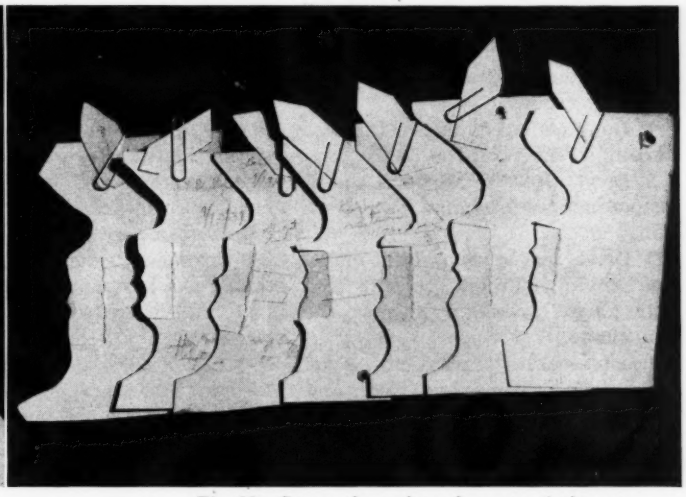


Fig. 10—Group of templates from practical cases.

gether and filed for use in the future.

The advantages of this method of obtaining a facial profile are: (1) accuracy; (2) that it can be done without elaborate equipment; (3) that it can be completed within five minutes.

Anterior All-Porcelain Restoration

LaMAR W. HARRIS, D.D.S., Chicago

"THE HEIGHT OF ART is to conceal art." Nothing else in dentistry offers so fine an opportunity to demonstrate this statement as all-porcelain restorations. Crowns can be made in any shape, shade, or variety of shades, with any markings desired. In other words, all-porcelain restorations can be made almost to defy detection.

In porcelain restorations the following points must be carefully considered:

1. The tooth should be prepared so as to preserve a definite, even, shoulder to seat the crown securely.

2. The preparation should also be made smooth, slightly conical and without undercuts.

3. A definite bevel, not point, should be established on the incisal edge.

4. Allow sufficient room for the porcelain. Its strength lies in its bulk and shape, but far more important than that is the technique of condensing and fusing.

A few "don'ts" must also be borne in mind:

1. Don't endanger pulp or the supporting structure of the tooth.

2. Don't proceed without roentgenograms to determine pulp location.

3. Don't seat crowns with rough, overhanging margins; be sure that only glazed porcelain touches the gum tissue.

4. Don't seat restorations unless you are satisfied as to shape, color, and the certainty of pulp preservation.

5. Don't jeopardize the possibilities of success by haste.

Technique

1. Study models and roentgenograms will help the operator decide on the physical appearance he will seek to reproduce. Particular care should be exercised in determining whether or not the bite will allow sufficient clearance. Color and model views show the condition of a practical case before treatment (Figs. A and 1).

2. Bridgework, inlays, and other restorations should be removed from the field of operation so as not to interfere.

3. The local anesthetic may be injected at any time during the procedure. It should be borne in mind, however, that the tooth tolerance to abuse does not increase because it is anesthetized. Care must be taken not to over-heat or over-abuse the tooth and supporting structures. Most devitalized pulps under porcelain restorations are caused by carelessness and failure to heed this advice.

4. The incisal enamel is removed with a diamond 70 stone, or three-fourth inch heatless wheel, a stream of water or a blast of air being used on the stone to prevent over-heating (Figs. 2 and 3).

5. Enamel is removed from the labial and lingual surfaces with the same stone or wheel, together with the use of water or air. A lingual clearance of 2 mm. is allowed from the opposing tooth (Figs. 4, 5, and 6).

6. The enamel is cut away on the mesial and distal to the gingival border with a diamond disk 126, or a seven-eighths inch joe dandy safe-side disk, again with the use of water or air (Fig. 7, 8, and 9).

7. With a diamond point 113, or a 558 cross-cut fissure bur, carefully prepare a 1 mm. gingival shoulder just under the free margin of the gums. During the preparation of the shoulder direct a blast of air against the gum tissue in direct line with the bur. This will force the gum tissue away from the field of operation and prevent mutilation of tissue; it will also give a clearer vision. Use well sharpened gingival trimmers to smooth the shoulder edge (Fig. 10).

8. Rough edges or undercuts are smoothed with a medium grit, seven-eighths inch, sandpaper disk. The root and crown are prepared with copalite, which seals the dentinal tubuli and makes a glossy surface. Two purposes are thus accomplished: the tube impression is easier to take and it lessens the thermal shock to the pulp during the impression-taking. Color view Fig. B shows the complete preparation, ready for the initial impressions.

9. Copper bands of proper dimensions are selected and festooned to include the coronal portion and shoulder without unnecessary excess. The labial surface of each band is marked to distinguish it from lingual. The festooned bands are filled with stick modeling compound and tempered in warm water. In seating the filled band over the preparation, be sure that sufficient pressure is exerted to enclose the entire impression inside the band. Chill with cold water, remove, and check for accuracy. The crown can be only as near perfect as is the preparation and band impression (Figs. 11 and 12).

10. The patient is dismissed wearing a temporary splint. This is made by warming a large stick of tooth tint temporary stopping and shaping it, with the fingers, to the teeth and mouth. Avoid too much bulk on the labial portion in order to maintain the correct lip line. After fitting the splint, remove it and fill with a paste of zinc oxide, oil of cloves, Kelly's paste, or a similar dressing; then reseat over the field of operation. This

(*These illustrations appear on pages 170-171*)

Fig. 1—Model of case before treatment.

Figs. 2 and 3—Removal of incisal enamel.

Figs. 4, 5, and 6—Removal of enamel from labial and lingual surfaces, with a 2 mm. lingual clearance from opposing tooth.

Figs. 7, 8, and 9—Enamel cut away on mesial and distal to gingival border.

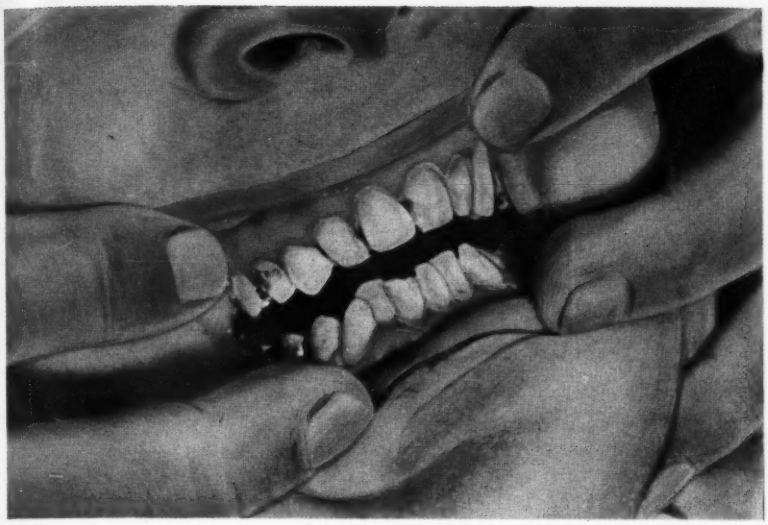
Fig. 10—Shoulder edge being prepared.

Figs. 11 and 12—Preparations and band impressions.

Fig. 13—Splint used for temporary coverage of preparations.

Figs. 14 and 15—Undersized jacket of model kryptex used as a matrix to fit over tooth preparation.

Fig. 16—Warmed blue inlay wax pressed between matrix and tooth to insure an accurate impression of contact point and proximal surfaces.

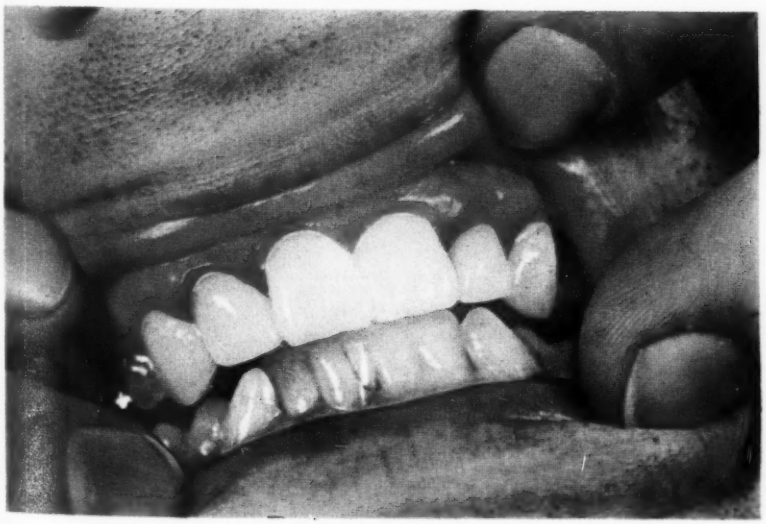


Color Plate A

Appearance of case before treatment.

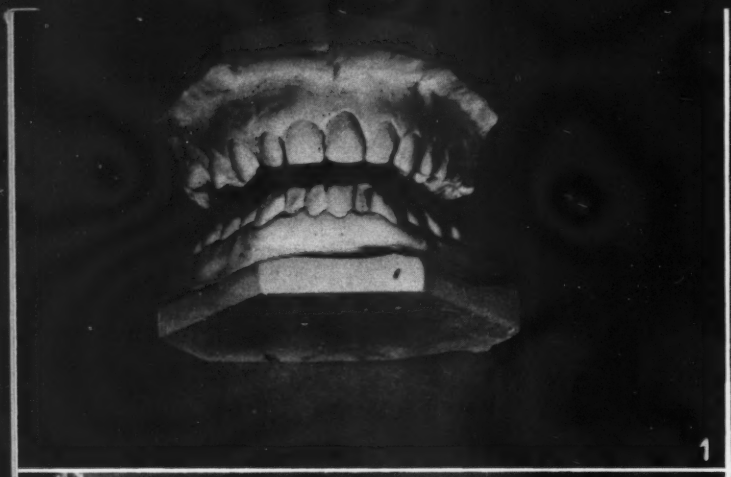
Color Plate B

Completed preparation, ready for initial impressions.



Color Plate C

Completed crowns. Note healthy gum condition several months after completion of restoration.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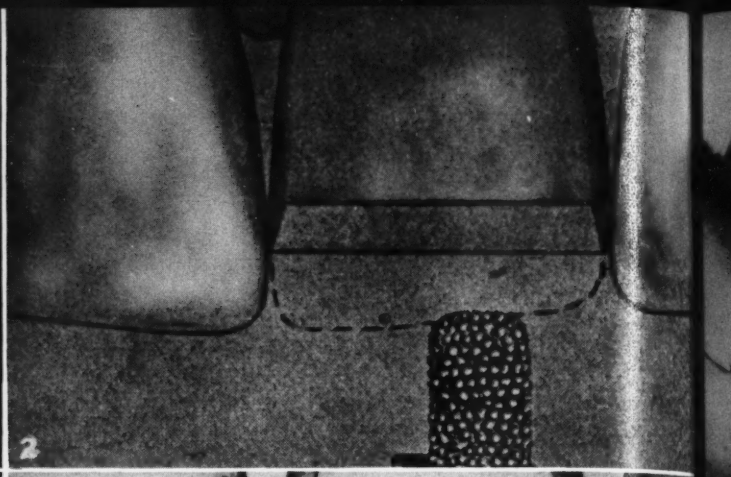
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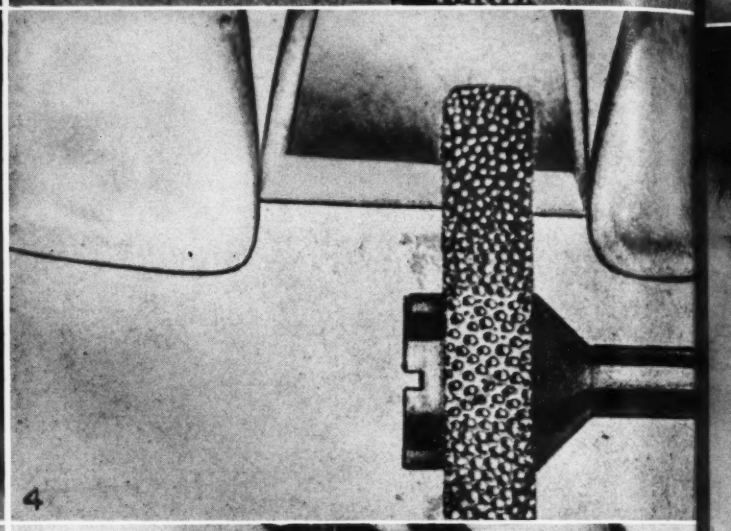
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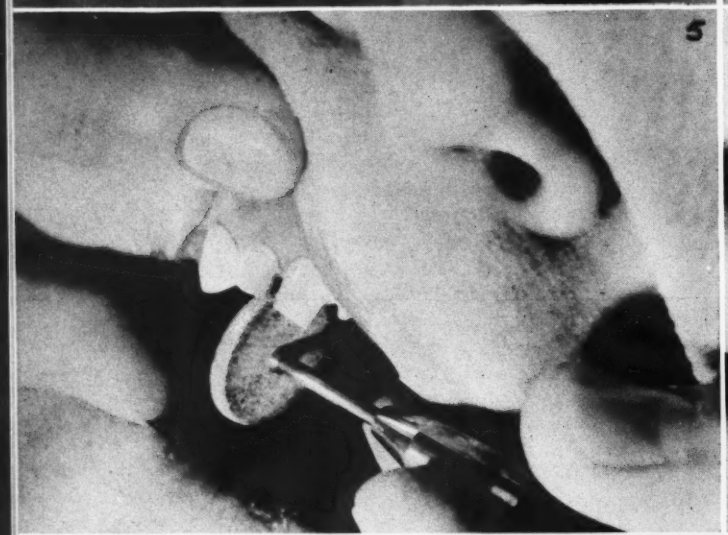
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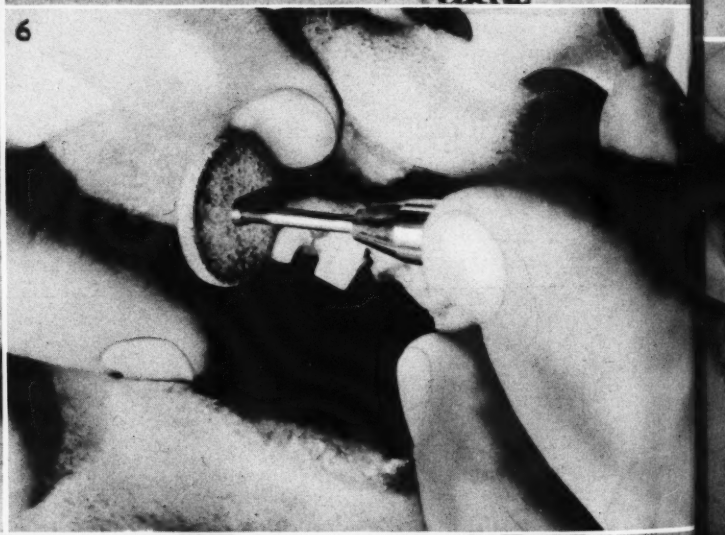
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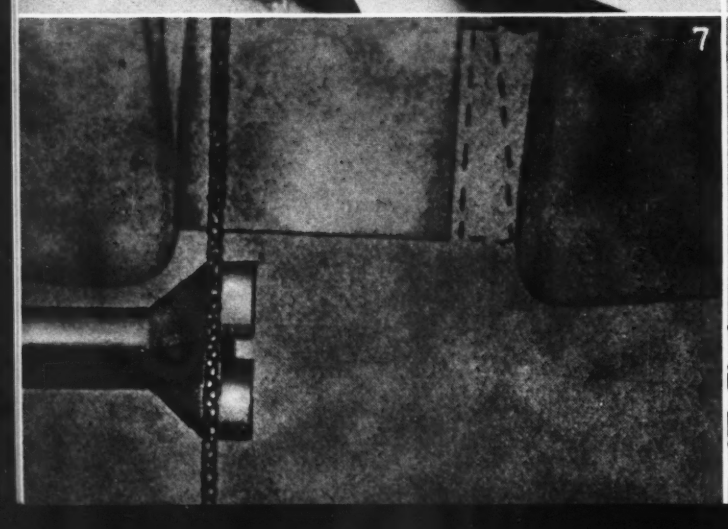
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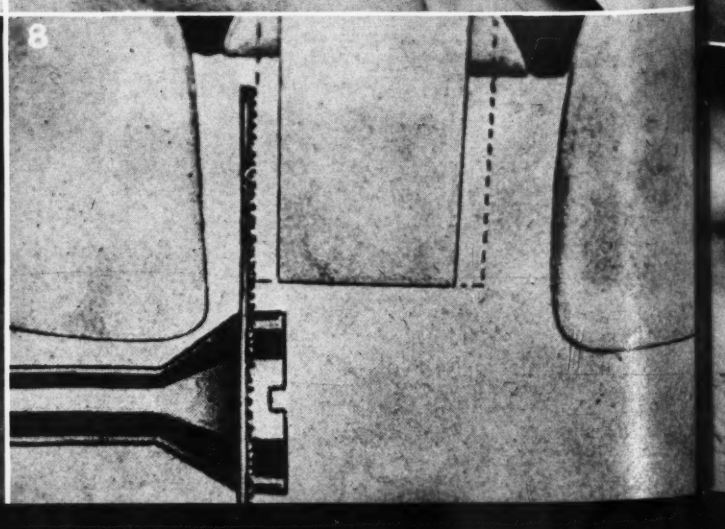
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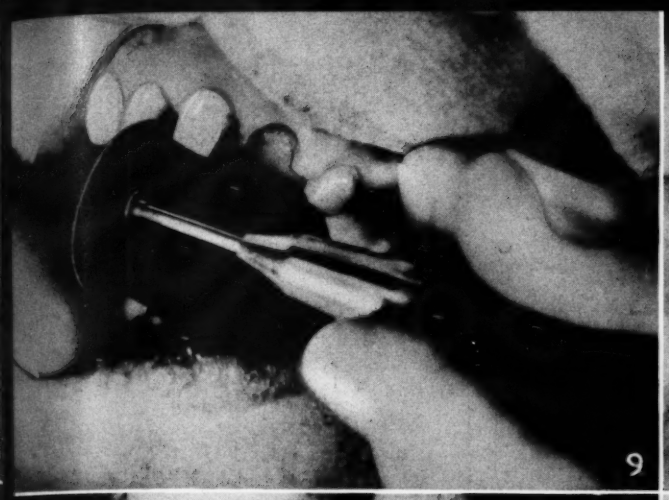
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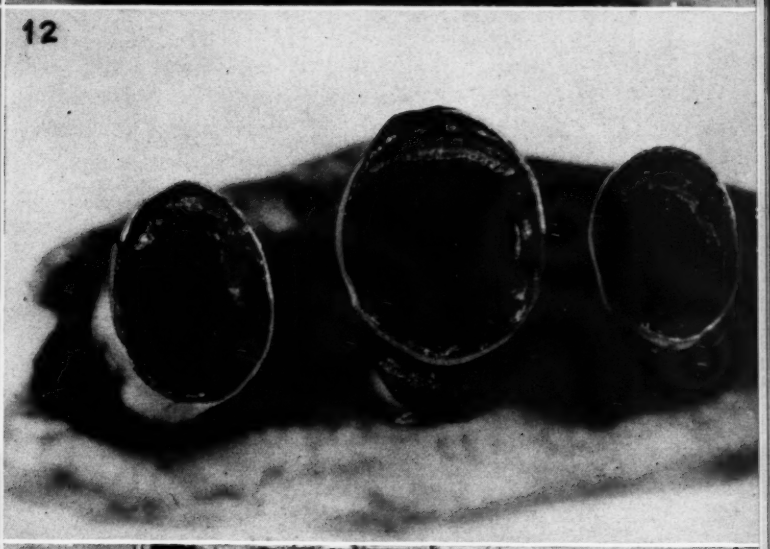
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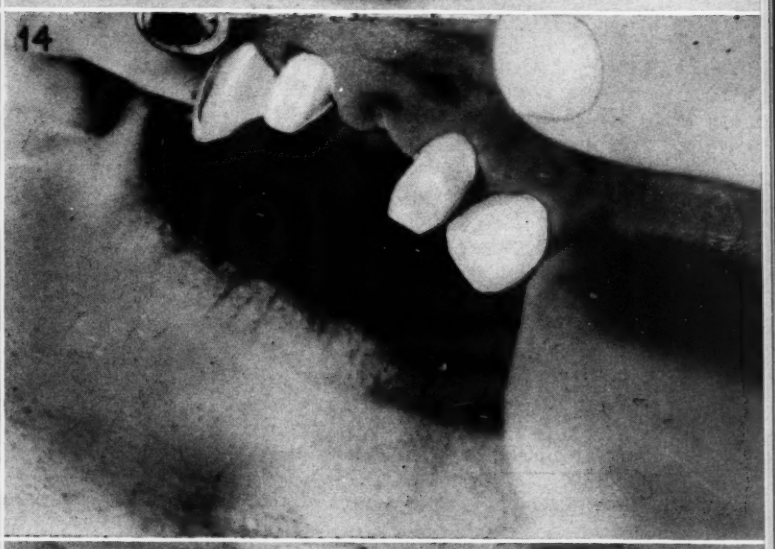
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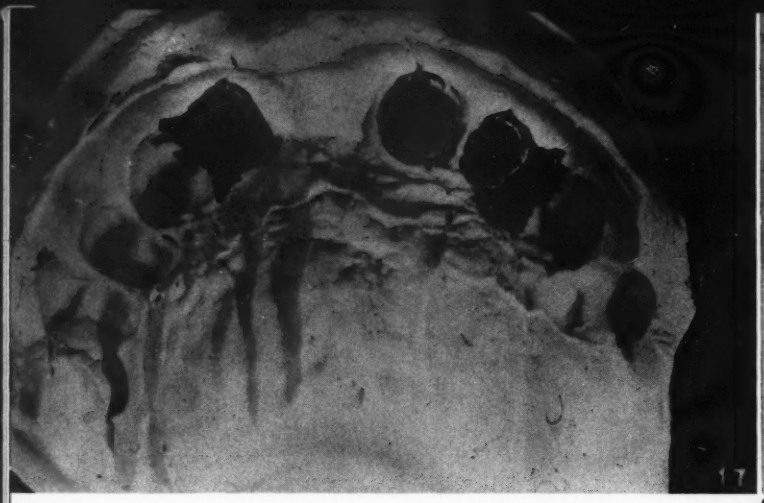


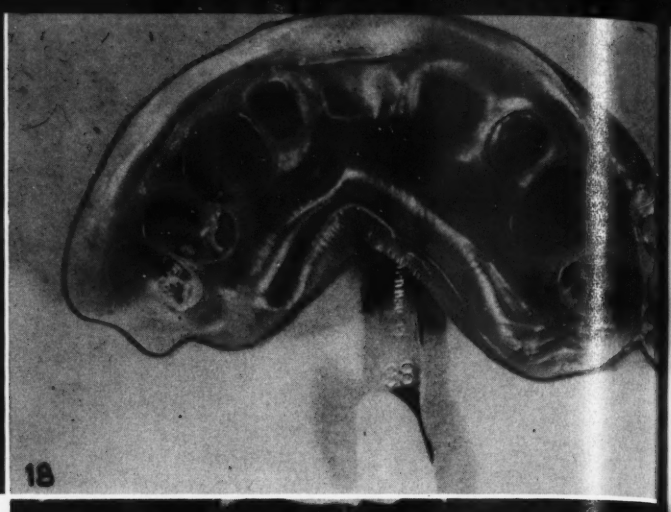


Fig. 17—Plaster of Paris impression, complete with matrix and wax, ready to receive amalgam die.

Fig. 18—Pink wax bite taken with teeth in centric relationship.

Fig. 19—Jackets returned from technician, ready for further shading, shaping, or marking.

has been found to be the most satisfactory form of temporary coverage (Fig. 13).

11. The removal of the splint on the following appointment is easily accomplished and a little oil of cloves on a pledget of cotton will dissolve the cementing material. Between subsequent appointments the same splint may be used and seated again with additional paste.

12. The tube impressions are given to the technician and amalgam dies are prepared from them. Tin foil is burnished over the dies in the same manner as the platinum matrix is prepared for the actual crown. In place of porcelain, however, an undersized jacket of model kryptex is prepared. This makes a definite matrix to fit over the tooth preparation (Figs. 14 and 15).

13. With the matrix definitely in place, blue inlay wax is warmed and pressed between the matrix and tooth to insure an accurate impression of the contact point and proximal surfaces (Fig. 16).

14. A plaster of Paris impression is now taken, complete with matrix and wax, ready to receive the amalgam die. Following this a pink wax bite is taken with the teeth in centric relationship (Figs. 17 and 18). The shade is best determined near midday on a clear day.

The value of the matrix is self-evident by now. It forms a positive seat for the die, with no chance of elongation, shortening, or tilting. In other words, a model run from this impression, accurately fitted to the bite, will insure perfect results.

15. Jackets are returned from the technician ready for further shaping, shading, or marking (Fig. 19). Here is the operator's chance to prove himself an artist in preparing the crowns for the mouth. During the trying-in the correct cement color can be determined by mixing cement powder with glycerin which will not set and washes out easily.

When it is certain that the crowns are correct in every detail, they are cemented.

16. Color plate Fig. C shows the crowns complete with all shading and shaping. The view shown is one taken several months after completion. This is to show the normal, healthy gum condition which is maintained thereafter.

For several months I have conducted experiments with tooth color acrylic resins for tooth forms in this class of service. Whether the material will stand up for other than transitional jackets is still to be determined.

25 *East Washington Street.*

The Editor's Page

PAIN IS A SUBJECTIVE phenomenon that cannot be measured or recorded on a laboratory instrument. Pain cannot be seen nor weighed. The threshold of pain varies for different persons and probably at different times for the same person. Some people are constantly hyperalgesic, whereas others are almost lacking in the sensation of pain. Race, physical condition, emotional states—all probably influence the degree of pain response. It is generally accepted that pain is Nature's defense and warning signal. The degree of pain is frequently out of all proportion to the objective conditions that initiate it.

In clinical dental practice, we are familiar with the comparatively small carious process which has not penetrated deeply into the dentine but which is excessively painful. We have likewise often observed extensive carious lesions, even with pulp involvement, which were almost pain free. In practice we are often perplexed when attempting to evaluate clinical conditions—particularly in the presence of obscure pain.

An eminent neurosurgeon, Walter E. Dandy of Johns Hopkins University, in a presentation before the Dental Centenary Celebration in Baltimore, suggested that we take the bird's eye view—seeing a total personality—rather than a worm's eye view—seeing a mere segment of a person. The bird's eye view in evaluating pain means, for example, that we consider odontalgia or the facial neuralgias not merely as disturbances somewhere along the course of a given cranial nerve but that we view these painful sensations, both in cause and effect, as total personality responses.

It is easy to over-emphasize the point of view of our special knowledge and interest. We can easily in our rôle of dentists overstress the dental origin of facial pains. Idiopathic pains in the head and face are sometimes of dental origin but usually are from lesions of the central nervous system rather than of peripheral tissues. Dandy pointed out in his masterful presentation that dentists are concerned with two neuralgias: trigeminal and glossopharyngeal, neither of which is due to peripheral lesions but to changes within the central nervous system. Neither has any direct relationship to dental disease, although an infected tooth may be a systemic depressant and thus a factor to aggravate any pathologic process.

Dentists are generally familiar with the clinical picture of trigeminal neuralgia involving one of the three divisions of the fifth cranial nerve. Glossopharyngeal neuralgia, however, is a clinical syndrome that is in close proximity to the dental zone. It is an exquisitely painful neuralgia induced by swallowing. The sufferer keeps his head down and forward to keep saliva from stimulating the trigger zone in the throat.

In defining the nature of pain we can never lose sight of psychogenic factors. Dandy warns that persons with fears, insomnia, depressions, night terrors, and diffuse pains of the head and face are manifesting the psychogenic stigmata. For such patients, he warns, "Do the least possible to the psychogenic patient. The more you do for him, the worse he becomes."

The job of dentists is to prevent the occasions of pain, to treat the condition when it can be treated by means at the dentists' control. Dentists owe it to their patients to be familiar with the vast fields of biology and medicine that lie outside dental practice. Mere familiarity with these fields is not enough. We have to know enough to refer sufferers beyond our ministrations to qualified people practicing in the other medical arts. Pain and the conditions that produce it are often buried deep in the human organism and human personality and require great skills to uncover and, if possible, to cure.

Reduction and Immobilization of a Compound Fracture of an Edentulous Jaw

EDWARD REITER, D.M.D., M.S., Cleveland

Operative Procedure

The patient was given nitrous-oxide and oxygen and ether to anesthetize him.

The skin on the left side of the face and neck were prepared for operation by first scrubbing with soap and water and then using a weak solution of iodine. The superfluous iodine was washed off with a sponge saturated with alcohol.

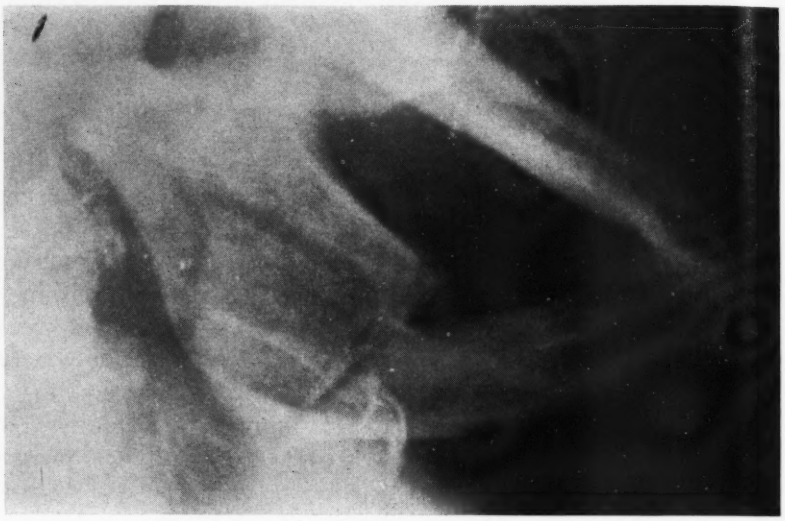
1. An incision was made through the skin below the border of the mandible from the angle to a point approximately opposite the cuspid region. The skin and superficial fascia were first dissected free from the underlying musculature. This is done to prevent puckering or scarring after the wound is closed.

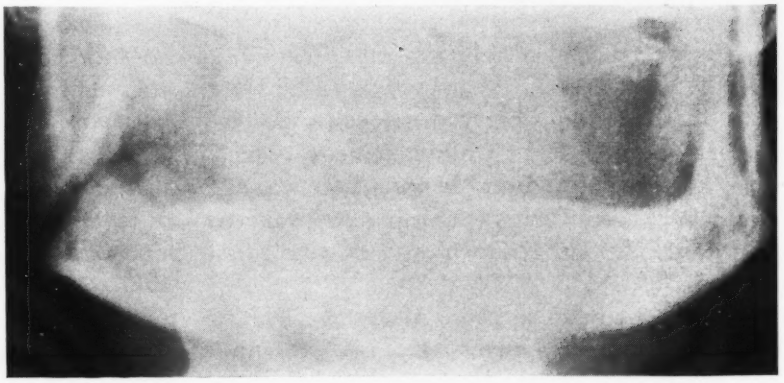
2. The platysma was separated and turned outward.

3. The incision was carried down through the periosteum to the inferior border of the mandible. When the periosteum was elevated from the buccal and lingual aspects the bony surfaces were promptly brought into full view.

4. The broken fragments were held firmly with heavy bone forceps while small holes were drilled through the bone on each side of the line of fracture. Small bi-beveled drills were used to pierce the bony structure at points 1, 2, 3, 4, 5, and 6 shown in Fig. 4.

5. After the holes were drilled the





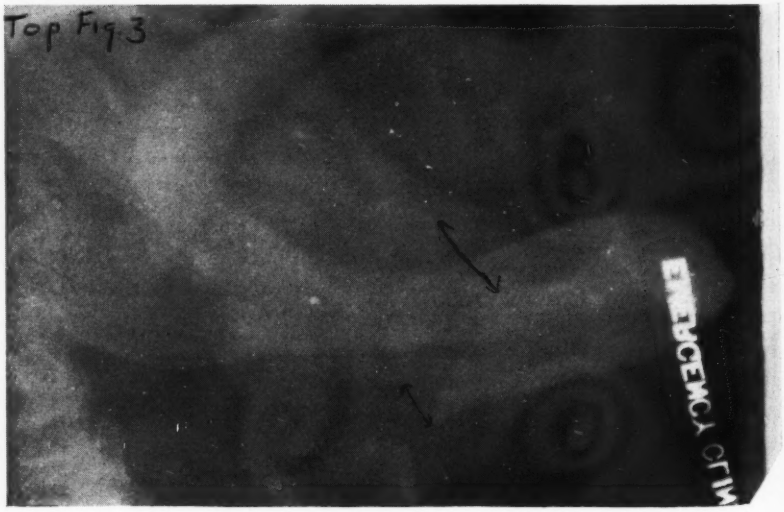


Fig. 1 (Top)—An oblique fracture through the angle of the mandible in an edentulous patient. This exposure does not accurately disclose the extent of the fracture. It gives misleading information, for it shows the parts to be in a relatively good position. This fault occurred principally because the central ray was directed at such an angle that it superimposed one fragment upon the other.

Fig. 2 (Center)—An antero-posterior exposure showing the downward displacement of the long fragment and the upward displacement of the short fragment.

Fig. 3 (Bottom)—True amount of lateral displacement. Arrows illustrate points that must be brought into apposition to reduce the fracture properly.

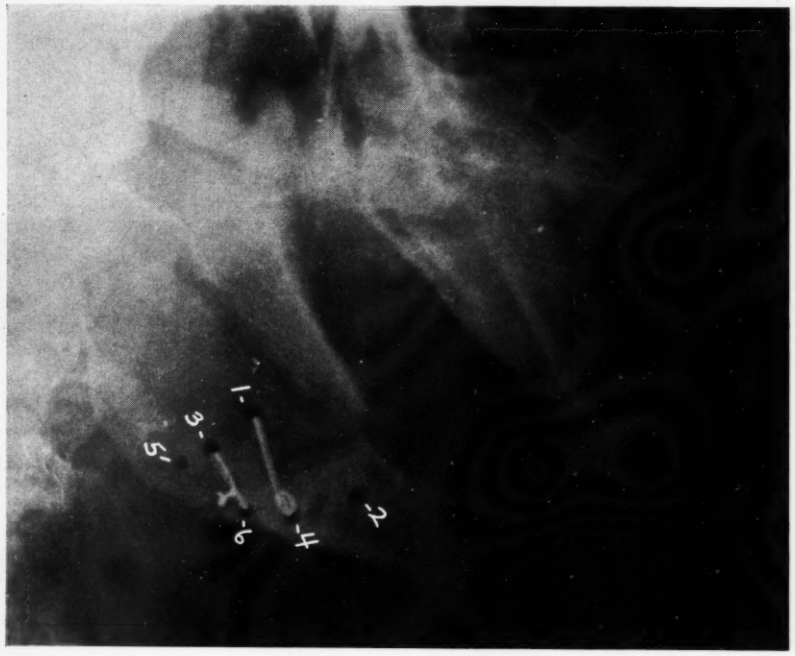


Fig. 4

Fig. 4—Immobilization of parts by use of stainless steel wire. Small holes drilled through bone on each side of line of fracture at points 1, 2, 3, 4, 5, and 6. Openings at points 2 and 5 were not utilized in immobilization as explained in text.

Fig. 5

Fig. 5—Line of fracture shown a little more distinctly but true extent of the lateral displacement found at operation is not revealed.

Fig. 6—Line of incision with sutures still in place three days after operation. There is considerable edema in tissues above line of incision.

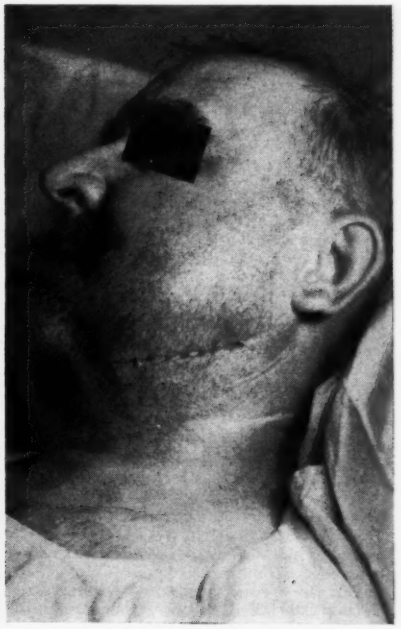


Fig. 6

fragments were brought into apposition and immobilized by the use of stainless steel wire. One wire was threaded through holes 1 and 2; another was threaded through the openings 3 and 4; and a third wire, through the openings at 5 and 6.

Although the wires were firmly tied, they failed to keep the fragments from becoming displaced. The mylohyoid muscle pulled the long fragment downward and the internal pterygoid pulled the short fragment upward.

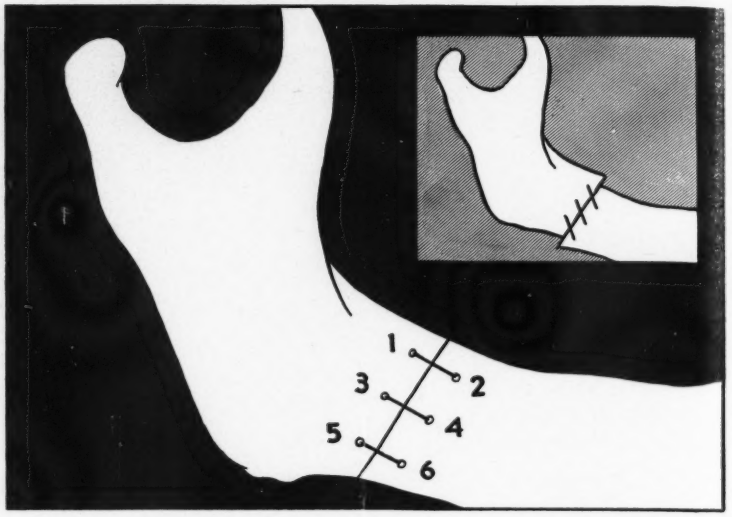
6. All the wires were then cut and another attempt was made to immobilize the broken fragments by threading the wires in cross-wise fashion. One wire was threaded through openings 2 and 3 (Fig. 4); another was run through the openings at points 1 and 6; and a third wire was threaded through the holes at 5 and 4. This method likewise failed.

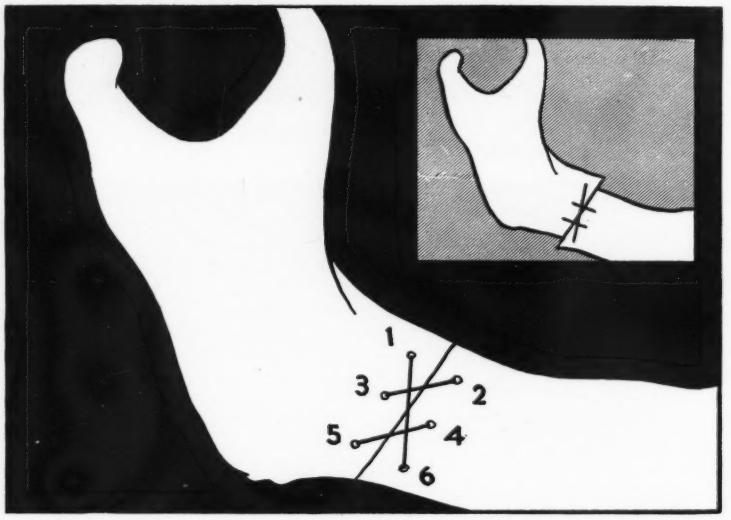
7. It was not until the wires were threaded through 1 and 4; and 3 and 6, as demonstrated in Fig. 4, that the parts were finally held immobilized in their correct relationships.

8. After the fracture was reduced and immobilized the musculature was closed by use of fine catgut and the skin was sutured with a fine dermal suture.

9. The sutures were removed on the fifth day and the patient made an uneventful recovery.

1114 *Republic Building.*





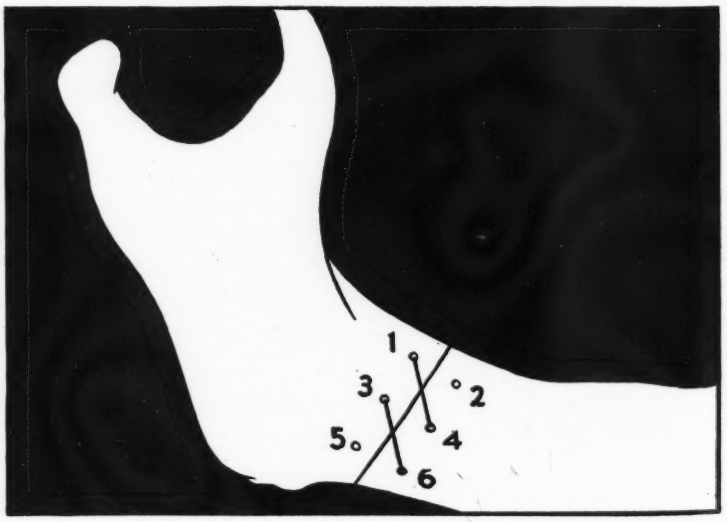


Fig. 7 — Top: This is what happened when the wires were laced in the fashion shown here. This first method of threading the broken fragments reduced the lateral displacement but would not hold the parts in good vertical apposition. There was still a downward displacement of the long fragment or an upward displacement of the short fragment.

Center: This is what occurred when wires were laced through the openings illustrated here in the second method of wiring. This method also failed to bring the parts into good vertical apposition, although there was a good reduction of the lateral displacement.

Bottom: The third method of wiring was successful. The parts were in good position vertically as well as laterally. See Fig. 4.

NOTES ON THE

Cuff

To Carping Critics . . .

UP IN FRONT the firing is always worse. Whoever sticks his head above the crowd makes himself a target for the bricks and it isn't necessary to raise the head very high before the bricks come sailing. The less people contribute to the world, the more critical they seem to be. The next time I hear the barber telling how Mr. Chamberlain should run the war or some itinerant vendor giving me the secrets of why the American government is going to pot, I hope I can remember the words of Professor Gras of Harvard University: "For those who have no undertakings and no major responsibilities, it is easy to be virtuous and critical. The yellow dog barks at the heels of the work horse without being able to drag the plow."

School Hours for Dental Appointments . . .

Not much has appeared in the dental press on one of the major problems that confront dentists in their attempt to treat school children. Many school systems are uncooperative in permitting children free time from school work to keep appointments with dentists and physicians. The forthright editor of the *American Journal of Orthodontics and Oral Surgery,* H. C. Pollock, has recently spoken out on the subject, particularly of the problem before orthodontists who must pour the greater part of their activities into two or three hours a day. Teachers in many communities are resentful of time taken out during school hours even for important appointments, such as those with dentists and physicians.

I would much rather see a child with a set of vital, regularly alined, normal-occluding teeth in his head than the facts concerning who swam the Hellespont, or what the cube root of something might be, or what English poet fell on his face after a hard bout with the jug. We should certainly

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NOW you can buy periapical and occlusal Eastman Dental X-ray Films at much lower prices. The material savings to you are indicated in the following list:

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1-gross Dispenser Package	$6.00	$4.50
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Package, 2 dozen packets	1.10	.85
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1-gross Dispenser Package	4.50	4.00
Package, 2 dozen packets	.85	.75
C-S, REGULAR-SLOW—1 film per packet (1¼″ x 1⅝″)		
1-gross Dispenser Package	3.75	3.25
Package, 2 dozen packets	.70	.60
CC-D, EXTRA-FAST—2 films per packet (1¼″ x 1⅝″)		
1-gross Dispenser Package	4.50	4.00
Package, 2 dozen packets	.85	.75
CC-S, EXTRA-FAST—1 film per packet (1¼″ x 1⅝″)		
1-gross Dispenser Package	3.75	3.25
Package, 2 dozen packets	.70	.60

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	OLD	NEW
Super Speed—2 films per packet (2¼″ x 3″)		
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Package, 1 dozen packets	2.00	1.50

There has been no change in any of these films, or in their packets. The films you buy at the reduced prices have all the distinctive characteristics for which Eastman Dental X-ray Films have been accepted by the dental profession as the standard of quality and dependability. The lower film cost will permit you to make more general routine use of radiodontics—the basis of practical preventive dentistry.

BE SURE TO VISIT THE KODAK BUILDING AT THE NEW YORK WORLD'S FAIR

Order your x-ray films, as well as processing chemicals and accessories, from your regular dental dealer . . . there is an Eastman item to meet your every requirement.

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Powder Portion
1 oz. $1.00
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14 cc. 1.00
6 Portions 5.00

● A low price and a truly scientific product are combined in Z-M Crown and Bridge Cement made by Ames. It meets A. D. A. Specifications on every point. Also, it embodies many desirable features not required by the Specifications. Any dealer can supply you. The W. V-B. Ames Company, Fremont, Ohio.

AMES DENTAL CEMENTS

for the Treatment of PULPS

Jammeson's Thymol Zinc Cement is a medicated cement of proven effectiveness in preventing or relieving irritation of the pulp and in preserving its vitality when inflamed or exposed. In addition to the Cement and the Liquid with which it is mixed, the complete package as illustrated above contains a bottle of Thymol Solution (cavity sterilizer), a glass cement mixing slab and full directions. The price is only $3.00 at your dealer's.

We invite you to send for a booklet written by Paul Jammeson, D. D. S. describing Thymol Zinc Cement and its use in detail. A letter or the coupon on page 188 will bring you a copy without charge.

Buffalo Dental MANUFACTURING CO., BUFFALO, N. Y., U. S. A.

try to encourage intelligence and mental discipline among children and give them a few working facts and a few ideas as to where they can find other facts. Almanacs and encyclopedias and dictionaries and reference books and telephone books were printed for a purpose. There isn't much point in carrying around in the nob all manner of dates and figures. Health is more important than scholarship and frequently determines the success in scholarship. A good sound body means more than any Phi Beta Kappa key.

Presumably it is a bad precedent to excuse kids to attend the circus or the opening of the baseball season, but I have my doubts even about that. When a dentist or physician tells school authorities that for the child's own good he should be excused from class work, certainly pedagogs should accept such an excuse as valid and not sulk in their tents or heap extra homework on the child.

Procaine Therapy . . .

Without procaine hydrochloride (neé novocaine) dentists would be minus a drug which is generally considered a Godsend. We have used this chemical in dentistry exclusively as a local anesthetic agent and have not recognized that the drug has therapeutic values as well. So far as I know, nothing has ever appeared in the dental literature telling that the drug is used in the treatment of disease. But it is. It is used in such varied conditions as angina pectoris, bronchial asthma, apoplectic shock, arteriosclerosis, herpes zoster, and ileus. Particularly in traumatic and orthopedic conditions the drug is of great value, according to Outland and Hanlon[1].

Following severe trauma, muscle spasm, loss of motion, pain and tenderness result. These phenomena are due to a violent excitation of the nerve tissue in an injured part. The excitation produces a disturbance of the vasomotor equilibrium with marked dilitation of blood vessels. This hyperemia produces pain, swelling and tenderness. If, by the use of procaine, the painful impulses may be blocked, the vasomotor mechanism will not be affected; hence, the blood vessel dilitation will not occur and pain, tenderness, spasm, and loss of motion will be prevented. Acute traumatic syndromes, such as fractures of

(*Continued on Page* 180)

A Diet to Build Sound Teeth *Must Contain Adequate* VITAMIN "D"

ONLY 85 of the 185 days of the New York World's Fair last year were clear. 31 days were rainy, 52 were cloudy, 17 days were overcast. Thus on more than half of the days during the summer months sunlight provided little or no "sunshine" Vitamin D.

The U. S. Weather Bureau figures show that similar conditions apply to many other sections of the country. They indicate the fallacy of relying on sunlight for the bone and tooth building Vitamin D at any time of the year. The dependable way of providing it is through Vitamin D milks, foods, and medicinals.

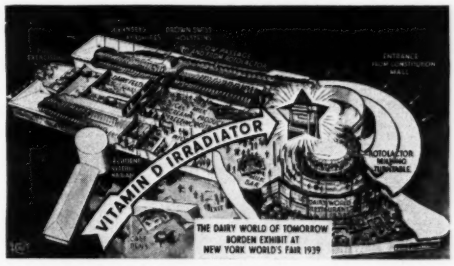
Tooth Minerals Equally Important

Calcium and phosphorus which compose more than 95% of the teeth must also be supplied in abundance for building and nourishing the teeth. *They depend primarily upon Vitamin D for proper utilization.* Speaking of the importance of these nutrients, Mary Swartz Rose, Ph.D., Columbia University, writes: "In regard to calcium, we must pin our faith to the teachings of science, and not trust to the outward appearance of the boy or girl. At the present time the only way to know whether a child has plenty of calcium is to see that a liberal supply is taken, along with a liberal supply of vitamins A, C and D, and phosphorus, all necessary to insure its best utilization."*

Proper Diet Essential

The calcium and phosphorus minerals are naturally present in milk and to a lesser degree in many of the common foods. However, foods generally contain little or none of the calcifying factor Vitamin D. The inadequacy of dietary sources, and the deficiency of solar ultra-violet impose the need for Vitamin D supplements. Vitamin D Milks and foods licensed by the Foundation are now generally available and inexpensive. Recommend them to your patients.

**NUTRITION AND THE HEALTH OF THE SCHOOL CHILD. Jour. Am. Diet. Asso. Feb. 1939. p. 73.*



Featured at THE NEW YORK WORLD'S FAIR

If you attend the New York World's Fair this summer, be sure to see how milk is irradiated for enrichment with Vitamin D at Borden's Dairy World of Tomorrow. Or visit one of the progressive dairies, evaporated milk plants or food factories in your own vicinity. Illustrated below are the Foundation-licensed Vitamin D products they produce.

Approved for VITAMIN D upon periodic tests

Every licensee of the Foundation is entitled to use this Seal on its Vitamin D products and in advertising. Every licensed product is periodically tested, whether or not the Seal appears thereon.

Irradiated Evaporated Milk—abundant Vitamin D at no extra cost.

Irradiated Metabolized and Fortified Vitamin D Milks.

Quaker Farina and Muffets—Rich in Vitamin D.

Cocomalt and Sunshine Graham Crackers—good sources.

Sunfed Flour and Bread—a better "Staff of Life."

Ovaltine, Dryco and Fleischmann's Yeast—good sources.

Also Viosterol and Viosterol-fortified medicinals prescribed by physicians

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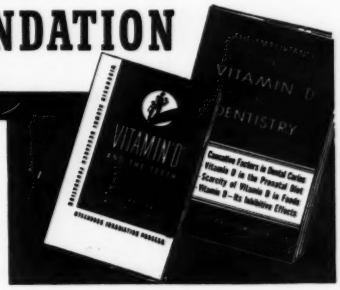

5 Reasons Why . . .

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1 BS POLISHERS will not harm delicate gum tissue . . . yet they quickly clean deep points of pits and fissures and under free gum margin.

2 BS POLISHERS are more convenient to use . . . because they're more compact . . . no, long clumsy mandrel.

3 Corrugation inside cup holds abrasive firmly against tooth surface and prevents throwing.

4 Your hand piece will last longer . . . because skirt on polisher minimizes the entrance of abrasive.

5 They run cool and smooth; more economical because they're made of the highest quality soft, flexible rubber.

Why experiment with the good will of your patients when the safety and efficiency of BS POLISHERS has been tested and proven by thousands of the most capable Dentists in the United States and many Foreign Countries, for almost three decades. Backed by a firm with over forty years experience. Order from your dealer. FREE sample BS and BABY BS POLISHER sent on request.

You will find BABY BS POLISHERS exceptionally convenient to use when cleaning children or small adult teeth. TRY ONE FREE. Use coupon, page 188.

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the jaw, may be relieved by procaine.

Treatment is simple: From 10 cc. to 30 cc. of a 1 per cent or 2 per cent solution of the drug are injected at the site of maximum tissue tenderness. The instruments are the same as those used for ordinary local anesthesia with the same aseptic precautions observed.

Vultures at the Polls . . .

Driving to St. Louis on Election Day every cross-road and city presented human vultures flapping their arms around the polling places. Some toted old ladies to the polls, being very friendly and handshaking to everyone, passing out their handbills and promises. These hangers-on are expecting jobs for themselves or their families. The Ins buttonhole the electorate telling them why they should stay in and the Outs do a similar job telling why the Ins should be turned out. It is the American custom with its bothersome side but it protects the American tradition: to turn "them" out even if they have been doing a good job. The Mayor of Milwaukee, most people agreed did a splendid job for more than twenty years, but the people grew tired of him and they wanted a new political dish. By such attitudes no dynasties of family nor entrenchments of policies will ever be perpetuated in this country. A few times we have come fairly close to establishing royal families but the threat did not last long.

Hircismus . . .

Speaking before the Washington University Dental Alumni on How To Kill A Dental Practice and trying to be euphemistic in describing an undainty condition to which dentists in common with other folks are sometimes subject, the word "hircismus" was used, whereupon the Chancellor of Washington University, George R. Throop, a former professor of Greek, informed me of the etymology of the word: "goat smell." This knowledge should make us doubly cautious of the condition.

Americana . . .

Things that are never told about motoring include such vestigial remnants as toll bridges which are hangovers from the days of private toll roads and turnpikes. In the 250 miles from St. Louis to Nashville the motorist crosses the three great rivers: the Mississippi, Ohio, and Tennessee, for which he hands out the sum of $2.30 in toll charges.

Pictures in the Dental Office . . .

Lester Noel of Nashville tells a group of other Nashville dentists, gathering in Oren Oliver's home after a dental meeting, the story of the reception room picture that his dentist-father bought. After all the proper furnishings were bought, Father Noel gave thought to the wall decorations. The picture of his choice was "The Bridge of Sighs" which occupied a place on the wall for exactly two weeks. The clamor of patients about to enter the dental chair after viewing the picture was too great.

Some commentator on the dental scene might furnish a list of objets d' art seen in the dental reception rooms of the country. Thus dentists might know what to discard. Among the pictures on this list would surely be found the toothy tiger which is frequently seen leering out from the wall of the reception room. Another, is the encouraging blind-folded "Hope." And a third, for people with wrecked mouths to gaze upon is the

(*Continued on Page* 182)

LAVORIS

A cleansing, stimulating mouth-wash. Helps promote healing.

Patients gladly use it

New, Steele's Ceram-a-Pak

A complete unit for ALL Dental Ceramic work.

Plus

New

TRANSLUCENT PORCELAIN

Steele's Ceram-A-Pak, a complete ceramic unit, contains the most popular shades of Apco (1875°F.) Porcelain, with a complete assortment of Steele's Super-Stains, Mixing Medium, Dilutant, Necessary Instruments, and Steele's Super-Glaze.

The Ceram-A-Pak is offered in a convenient mahogany finished cabinet.

Apco "T" Porcelain requires no special technic, matures at 1875°F.

Steele's NEW Translucent Apco porcelain is indicated wherever translucency is desired.

WRITE TODAY FOR DETAILED INFORMATION ON THESE NEW PRODUCTS. Use coupon, page 188.

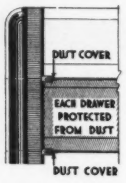
STEELE'S TRANSLUCENT APCO PORCELAIN, A NEW DEVELOPMENT IN THE FIELD OF CERAMIC DENTISTRY, IS INCLUDED IN THE ABOVE SELECTION.

The Columbus Dental Manufacturing Co., Columbus, Ohio, U. S. A.

NEW No. 141-A Cabinet with NEW Features

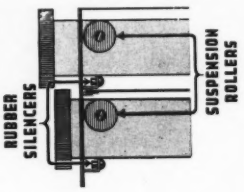
For greater convenience, get a new No. 141-A American Cabinet. It has 18 easy running steel-wood drawers, equipped with roller suspensions. It is modern in design with rounded corners. The black formica working surface is unbreakable, acid resistant and has a raised rim. The automatic medicine compartment holds 16 bottles, concealing them when not in use and making them easily accessible when desired. All of the drawers are silenced . . . rubber bumpers insure quiet operation . . . and rubber cushions eliminate tray rattling. Send in the coupon for more complete information on this new No. 141-A American Cabinet.

18 Dust Proof Drawers



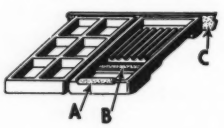
Each drawer is covered with a sheet of steel that has a rubber lip at the front to cushion the closing of the drawer and seal it against dust.

Roller Suspension Drawers



At a touch of the finger tips, the drawers glide quietly in and out of the cabinet.

Silent Operation



Rubber cushions in the drawer eliminate tray rattling. Rubber bumpers on the drawers assure silent closing.

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Send me full information on the new No. 141-A American Cabinet.

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ruins of the Coliseum in Rome.

"Seventeen". . .

In the land made famous by Booth Tarkington, surrounded by the youth he knows so well, we spent a weekend. At Turkey Run State Park in Indiana we observed three different high school parties: the boys and girls, "seventeen," with their feet too big and their hands so awkward, with their adolescent acne and their plastered cowlicks—the boys fearful of being thought too attentive to the girls and the girls trying hard to be sophisticated and uninterested in the boys. The class president with his red cheeks and his trembling hands and tremulous voice gives his much rehearsed speech. Outside the meeting room are their elders with their paunches and facial furrows, recalling the days when they were "Seventeen."—E. J. R.

[1]Outland, Tom and Hanlon, C. R.: Procaine Hydrochloride, J. A. M. A. 114:1330 (April 6) 1940.

DENTAL MEETING *Dates*

Five State Post Graduate Clinic, eighth annual meeting, Willard Hotel, Washington, D. C., May 19-23.

•

Philadelphia Dental College, seventy-seventh annual meeting, Philadelphia, May 22-23.

•

Canadian and Ontario Dental Associations, annual convention, Royal York Hotel, Toronto, Canada, May 27-29.

•

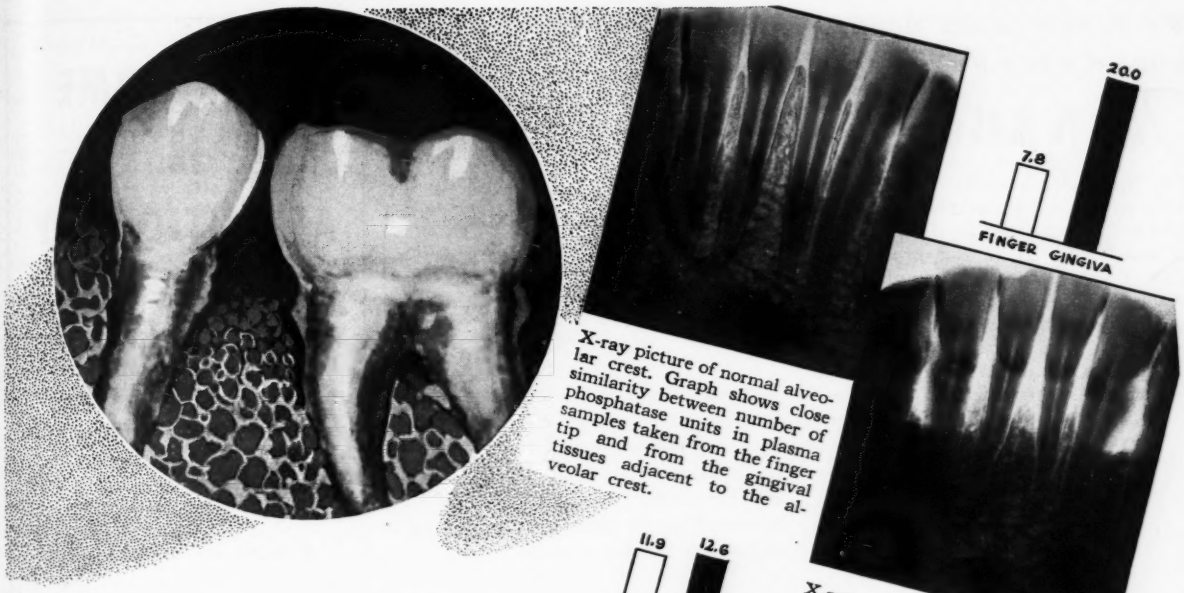
Alumni Association of the Atlanta-Southern Dental College, eighth annual meeting, College Building, Atlanta, Georgia, June 4-6.

•

Connecticut State Dental Association, seventy-sixth annual meeting, Griswold Hotel, New London, June 5-7.

•

The Northeastern Dental Society, Swampscott Convention, New Ocean House, Swampscott, Massachusetts, June 9-12.



X-ray picture of normal alveolar crest. Graph shows close similarity between number of phosphatase units in plasma samples taken from the finger tip and from the gingival tissues adjacent to the alveolar crest.

X-ray picture of "rapid" type of alveolar crest destruction. Graph shows that the phosphatase content of plasma taken from gingival tissue adjacent to the area of bone dissolution is appreciably higher than in plasma from the finger tip.

New Research in PERIODONTAL DISEASE

Recognition of alveolar bone destruction as a cause of loosening and loss of teeth has stimulated intensive study of biochemical changes accompanying this process. Bristol-Myers Research Fellows, investigating this problem at a prominent dental university, announce that plasma phosphatase values are significantly higher in the vicinity of the alveolar pathology than in general circulation. With further research, it is hoped that such basic findings may contribute to the eventual discovery of a method for alleviating this condition. A report of this study will be sent to any interested dentist. Use coupon on page 189.

SCIENTIFIC RESEARCH IN PROBLEMS OF ORAL HEALTH IS SPONSORED BY GRANTS AND FELLOWSHIPS

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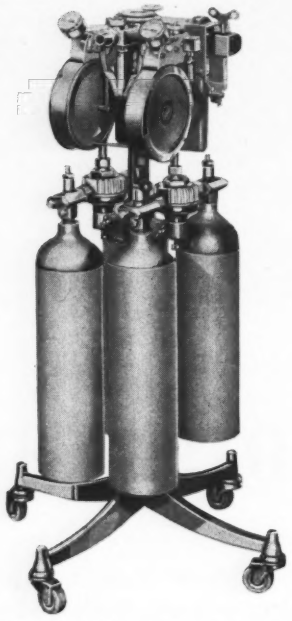
The **NARGRAF**

The Nargraf is actually designed and built to the specifications of dentists who are experienced in the problems of anesthesia. It is the product of thirty years research, engineering experience, and intimate study of the operator's practical problems. Insofar as it is possible to approach the ideal in any dental equipment, the Nargraf has succeeded.



- The Nargraf coordinates the flow of gas with the patient's respiration.
- It produces anesthesia with greater ease to the patient and with no loss of time.
- It is particularly efficient in anesthetizing robust or difficult cases.
- Once adjusted, the Nargraf actually breathes with the patient, thus permitting the operator to devote his entire attention to the operation.
- The simplified control has reduced the technique of anesthesia to its simplest terms.
- It provides economy in gas consumption found in no other gas dispensing equipment.
- The intermittent flow principle, the simplified dosage control and the immediate oxygen release combine to provide the operator with positive and immediate control of the patient.

The Nargraf has what you want in an anesthesia machine; simplified technique, ease of operation, quick and easy anesthesia, efficient results with robust and difficult cases, maximum economy in gas consumption. The coupon on page 189 will bring a copy of the Nargraf book.

McKesson Appliance Co., Toledo, Ohio

Massachusetts State Board of Dental Examiners, next meeting, June 10-13. Applications must be filed at the office of the Secretary, Francis M. Cahill, D.M.D., State House, Boston, at least ten days prior to examination.

•

Pennsylvania State Dental Society, seventy - second annual meeting, aboard ship on the *S.S. South American* of the Georgian Bay Line, sailing from Erie, June 13-16.

•

South Dakota State Board of Dental Examiners, next meeting, June 24-27. Carpenter Hotel, Sioux Falls. Applications must be in the hands of the secretary, C. H. Boyden, D.D.S., Mitchell, South Dakota, at least ten days prior to examination.

•

Connecticut Dental Commission, next meeting, June 25-29, Hartford. Applications must be in the hands of the Recorder, A. J. Cutting, D.D.S., Southington, Connecticut, at least ten days prior to examination.

•

Virginia State Dental Examiners, next meeting, Medical College of Virginia, Richmond, June 11. Applications must be in the hands of the secretary, John M. Hughes, D.D.S., at least fifteen days prior to examination.

•

Wisconsin State Dental Economic Study Club, tenth annual meeting, Madison, August 2-3.

•

National Dental Association, annual convention, St. Louis, Missouri, August 12-16. For information write to Doctor J. A. Jackson, 406 Commerce Street, Charlottesville, Virginia.

•

American Dental Association, annual meeting, Hotel Statler, Cleveland, Ohio, September 9-13.

•

American Dental Assistants Association, sixteenth annual meeting, Hotel Cleveland, Cleveland, Ohio, September 9-12.

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The RUNNYMEDE on beautiful Park Place, overlooking the ocean, is a favorite hotel for those who are accustomed to the finer things in life.

Here you will find all those little refinements so essential and necessary in one's daily life—truly, "your home away from home." Attractive rates.

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